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Offshore Oil Decisions**

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WASHINGTON STATE & OFFSHORE OIL AND GAS

**State and Local Influence
Over
Offshore Oil Decisions**

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with
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Washington Sea Grant Program
University of Washington • Seattle 98195

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ABOUT THE OCEAN RESOURCES ASSESSMENT PROGRAM

In April 1992, the Minerals Management Service (MMS) of the U.S. Department of the Interior plans to conduct Lease Sale #132 for offshore oil and gas exploration and development in federal waters on the outer continental shelf off the coasts of Washington and Oregon. This has been the driving force behind recent Washington state actions on this issue [earlier, the State Department of Natural Resources had imposed a moratorium on leasing for oil and gas inside state waters].

The Governor of Washington has asked MMS to delete about half of the lease sale area off the Washington coast and has joined Oregon, California, Massachusetts, and the National Resources Defense Council, an environmental group, in lawsuits against DOI, challenging its current Five-Year OCS Oil and Gas Leasing Program. Meanwhile, MMS is sponsoring several pre-lease environmental studies, and, at this writing, the first step in the sale process is less than one year away. In November 1989, MMS plans to request that oil and gas industry members indicate their level of interest in Lease Sale #132. Under the present plan, if industry interest is sufficiently high, successive steps in the lease sale process will proceed.

Through the Western Legislative Conference in 1986, members of the Washington Legislature became concerned that the state was unprepared for the potential development being planned by the federal government. Engrossed Substitute Senate Bill (ESSB) 5533 was the result. It became effective law on July 26, 1987. Of the \$800,000 originally requested, the Legislature appropriated \$400,000 to Washington Sea Grant to conduct the studies mandated by this law.

Why Sea Grant? First, the University of Washington has a renowned College of Ocean and Fishery Sciences, and Sea Grant is an effective pathway to that expertise. Second, Sea Grant is experienced in interdisciplinary research design, procurement, and administration. Third, Sea Grant has a communications network with other universities, giving Washington State quick access to nationwide expertise. Fourth, part of Sea Grant's mandate is to work with academe, government, and industry, without political advocacy, in a non-regulatory, information-support role. Last, Washington does not have

statewide planning and assigning the responsibilities of ESSB 5533 to a mission-oriented state agency might have created concerns about objectivity and fairness.

This law is ocean information oriented, as opposed to Oregon's C-ESB 630, which is ocean management oriented. Management could be the next step for Washington State. Through its Ocean Resources Assessment Program (ORAP), Washington Sea Grant is synthesizing existing scientific information. The Legislature's Joint Select Committee on Marine and Ocean Resources acts as oversight committee for ORAP. In the 1989 Legislative session, convening in January, ORAP is to report its findings about information gaps and research needs and present a plan for future studies.

In designing ORAP, an overall guideline was the determination to benefit from the experience of others and to not duplicate past and current studies. Thus, ORAP has sponsored little original research but has concentrated on synthesis and planning. ORAP consists of seven projects, including the study from which this book is derived:

- **State and Local Influence Over Offshore Oil Decisions**—the present study of the roles and mechanisms of state and local governments in offshore oil decision-making, as revealed by experience in other states.

- **An Advisory Committee**, as required by law. Sea Grant recognized the need for broad educational base-building among the policy-makers in state and local governments, tribal authorities, and citizen groups. Ten Legislators, equally split by party and body, were members of this advisory committee. Sea Grant devised an innovative approach to help the 32 members of this committee educate themselves quickly about the offshore oil and gas industry and its typical facilities, equipment, operations, and impacts. The committee functioned like a task force and reported to Sea Grant on information needs and priorities. This project is a worthy model for others who must deal on a tight schedule and budget with new, complex issues of high public concern.

- **Hydrocarbon Potential of the Washington OCS**—an assessment by the State Department of Natural Resources, to help identify geologic formations that might be of potential interest to industry.

- **Coastal Oceanography of Washington and Oregon**—a regional oceanography text, making contributions to science on 15 of the 22 subjects mentioned in the law. Multi-edited and authored, the hardcover book presents the results of many years of research. Sea Grant funded the final efforts needed to make the book available in time to influence OCS decision-making and future research.

- **Conceptual Framework for Future OCS Research**—a workshop to develop a framework that will help determine "what's important?" and help ensure that future research is both well-targeted and well-founded scientifically.

- **The Washington Coast: A Synthesis of Information**—a report on existing information, information gaps, and research needs.

- **OCS Studies Plan: A Report to the Washington State Legislature**—a plan developed by Washington Sea Grant, as required by law, building upon the other ORAP projects and other studies.

Washington Sea Grant is publishing reports of each of these projects, except for the coastal oceanography text, which is being published commercially by Elsevier Science Publishers. Meanwhile, the Legislature's Joint Select Committee on Marine and Ocean Resources is grappling with statewide policy alternatives and may propose legislation for the 1989 regular session.

B. Glenn Ledbetter
Manager, ORAP
November 1988

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ABOUT THE INSTITUTE FOR MARINE STUDIES

The Institute for Marine Studies is a teaching, research and public service unit of the University of Washington, College of Ocean and Fishery Sciences. The Institute offers a Master of Marine Affairs degree through a two-year thesis program available for mid-career and recent college graduates. Faculty and student research and service focus on the policy dimensions of marine problems and opportunities. Areas of interest include coastal zone management, ports and marine transportation, fisheries management, marine pollution control, non-living marine resources, and marine policy.

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Executive Summary

Outer continental shelf oil and gas leasing and development pose critical issues for states and local governments. This study is a component of the Ocean Resources Assessment Project (ORAP). It is designed to help the State of Washington prepare to participate in proposed federal leasing of the outer continental shelf (OCS) offshore Washington and Oregon. The study seeks to understand the role of states and local governments in OCS decision making by examining their experience in regions throughout the country. Particular attention is paid to how states and local governments address critical issues of siting, impacts, and mitigation.

RATIONALE

States, local and tribal governments, federal agencies, and private interests have access to the decision process surrounding OCS leasing and development. The decision arena is complex, revolving around the OCS leasing program of the U.S. Department of the Interior (DOI) and its Minerals Management Service (MMS) but including a number of regulatory and management programs at the federal, state, and local levels. OCS decisions require a tremendous amount of technical information in areas such as oceanography and ocean biology, petroleum geology and economics, water and air quality, socioeconomics, and land use planning. OCS decisions have also become highly controversial. The decision arena often involves confrontation but has grown to incorporate significant elements of negotiation, accommodation, and compromise.

This study considers a number of central and often controversial issues:

- o The pace, scope, and location of leasing and development.
- o The definition of risks, impacts, and external costs of development.
- o Mitigating measures and/or compensation mechanisms used to minimize risk and account for external costs.
- o Organizational arrangements, both internal and intergovernmental, through which OCS information is used and decisions are made.

Informed dialogue among key governmental and industry participants can increase mutual understanding of these issues and ensure that a broader range of alternatives is considered. An informed dialogue may lead to shifts in policy and the accommodation of diverse interests in the decisions made.

This study describes the types of information that have been most useful to states and local governments in promoting and protecting their interests in OCS decision making. A basic assumption is that, in order to participate effectively and achieve results, states and local governments must develop and use "decision relevant" information which can serve as the basis for reasonable communication and exchange. Decision relevance means that the right type of information is available at the right time -- that the information is phrased in ways and contains alternatives to which MMS, industry, and others can respond positively.

APPROACH

Most areas of the country have had more experience than Washington State in responding to the MMS leasing program. A few states have had extensive involvement with exploration and development projects. This study synthesizes the experience of states and local governments in their dialogue with MMS and industry over OCS decision making. It addresses how information was marshalled as part of the decision dialogue. The focus is on the major steps relating to federal leasing and offshore permitting and to onshore planning and permit review. The study also reviews institutional arrangements by which state and local governments organize themselves to generate and use needed information.

Cases selected for this study provide broad geographic representation. Each was identified by a variety of OCS participants as important or useful in understanding aspects of the decision process. Also, the cases represent different levels of prior state experience with OCS issues and show a variety of state policies and attitudes. The greatest attention is devoted to innovative and effective examples, as seen from a state or local perspective.

Material for this study comes primarily from the formal comments and responses among agencies and industry and from interviews with participants. Thus, although technical analysis or formal scientific review may have been conducted for a given issue, the focus is on the way that information influenced policy decisions and leasing or development results.

Several sets of issues are not addressed in this study because they are not major avenues by which states and local government influence OCS decisions. They are important, but not central, to decisions about what is or is not leased and what mitigating measures are used:

- o Design and operating standards for OCS activities, such as rig construction and safety specifications, worker safety procedures and controls, or preferred drilling practices. These issues are addressed in the "OCS Orders," MMS regulations which are more national in scope and are revised less frequently than measures associated with a lease sale.
- o Worldwide economic and industry trends with respect to petroleum prices, rig availability, and refining capacity. Information about these issues is important for a state in predicting industry interest or evaluating development opportunities. Generally, however, these trends do not influence specific leasing and development decisions directly.
- o National issues of energy supply and demand and the overall development of federal policies and programs. The report uses observations of the process as it has occurred over the last 10 to 15 years and does not make any assumptions about possible near-term or long-term shifts in federal policy for OCS leasing and development.
- o Petroleum resource information for offshore areas. This is a critical type of information which allows states to plan for areas of

expected exploration and development activity. This topic is the focus of another project within the ORAP program.

ORGANIZATION

Chapter 1 discusses the history of OCS activity and describes DOI/MMS leasing program. Next, the context for OCS activities in Washington State is reviewed, followed by a discussion of decision relevant information. Chapter 2 reviews experience with two types of decisions within the MMS/DOI program: area identification (deferrals) and mitigating measures (lease stipulations and permit conditions). Information needs associated with these decision points are analyzed.

Chapters 3 - 5 present case examples of OCS decision making. Chapter 3 provides examples from around the country which emphasize the area identification process, mitigating measures, and environmental studies. Key issues and specific results at the prelease, lease, and exploration phases are emphasized. Chapter 4 and Appendix C present case studies of development and production projects in the Santa Barbara area of California, with special emphasis on the role of local government and industry at the production planning stage. Chapter 5 reviews selected organizational arrangements for the development and communication of information and the analysis of issues. The cases include three examples of innovative state strategies and one private interindustry relationship. Finally, Chapter 6 offers general conclusions which synthesize the results of this study.

RESULTS

Chapter 1, The Decision Arena, briefly notes the national trends in exploring for and recovering oil and gas from the outer continental shelf. There is considerable production in the Gulf of Mexico and Pacific regions and continued high expectations for the Alaska OCS region.

In the 1960s and 1970s, heightened environmental awareness prompted passage of many new laws that affect OCS oil and gas development. Each new law meant that additional resource information should be taken into account in decisions about OCS leasing and development.

MMS has established a highly structured process for reviewing and reaching decisions on its leasing program. The key stages in the process, each of which involves many steps, are the 5-Year Leasing Program of proposed sales for the entire nation, lease sale planning for a particular planning area, drilling permits and consistency review once a lease is granted, and onshore development which tends to involve state and local jurisdictions more than MMS.

Throughout the many steps, there are opportunities for state and local interests to be expressed. These opportunities become greater once the postlease stages are reached. State and local interests are strongly felt, and the result has been a highly controversial and complex decision arena.

Washington State's OCS area is scheduled to have a lease sale in April, 1992. Although there has been seismic survey work off the coast, and some exploratory drilling, the area is considered frontier by MMS. Washington State has begun to organize to address information needs and organization and policy issues concerning its stance on OCS oil and gas. A number of existing jurisdictions, including the Department of Ecology, Department of Natural Resources, and the Energy Facility Site Evaluation Council, have existing jurisdiction over OCS affairs.

The U.S. Congress, in setting up the structure for offshore oil and gas development, appears to call for a rational process whereby energy development, environmental, multiple use, and revenue factors are carefully balanced in reaching decisions. The Secretary of Interior is given ultimate authority to make these decisions. However, there are a variety of limitations on the rational model for OCS decision making, including uncertainty about location and magnitude of petroleum resources, the nature of the risks, the value placed on biological resources, and mistrust among governmental and industry groups.

Skeptics might conclude that the decision-making system is so complex and politicized that no amount of systematic information can aid in reaching consensus. This study assumes that scientifically derived information is essential to responsible decision making but that a critical evaluation of its role in actual practice is needed.

The MMS Environmental Studies Program attempts to provide scientifically derived information for the decision process. The program has had difficulties fulfilling this role effectively. Early approaches were criticized as too general. Later studies were not defensible in the scientific

community. The program was overhauled in 1978, and a new system for prioritizing studies at the regional level has been introduced. Issues that remain include how the scientifically derived information is interpreted and used in decision making. Ultimately, the Secretary of Interior exercises enormous discretion and his decisions are routinely the subject of technical, legal, and political challenge.

The information needs of states and local governments are much different from those stressed by MMS. It is essential that state and local governments go into the decision arena with a good understanding of how information can be used to influence decisions.

Chapter 2, Prelease to Exploration: Management Tools, describes the use of information in OCS decision making through an analysis of three sets of decision processes:

- o The area identification process that results in decisions to offer areas for lease and to defer blocks from leasing consideration.
- o Decisions about lease sale stipulations that will regulate activities on the leases.
- o Decisions on permits for various activities associated with exploration of leased tracts.

The area identification process takes place at several steps in planning for a lease sale and extends over successive proposed sales in a planning area. The use of scientific information in defining deferral areas is often overshadowed by political influence. Deferral of large areas tends to occur because oil and gas resource potential is low or development is infeasible. Deferrals for protection of biological resources tend to be small sets of tracts or buffer strips, although some larger exclusions have been made due to biological concerns.

Stipulations are legally enforceable mitigation measures which become part of the lease agreement between MMS and a lessee. Stipulations cover a wide range of issues. MMS is considering standardization of lease stipulations but recognizes the importance of regional variability. States must take an active role in proposing and promoting specific stipulations and may expect them to evolve over time.

Permits result in specific conditions on oil and gas exploration and production. Key permits for state interest include those for seismic surveys,

exploratory and development drilling, and discharges from drilling operations. The permit stage is more accessible to states than the lease sale stage because of the coastal zone management consistency determinations made at this time. States must initiate a dialogue with MMS, industry, and other federal agencies to ensure that feasible mitigation measures are developed.

Deferrals, lease stipulations, and permit conditions are management tools used to reduce the potential for adverse impacts from oil and gas exploration and development. They may be viewed as a hierarchy of mitigation measures in terms of geographic scope and level of protection. States have greater influence over permits than over stipulations, and least influence over deferrals.

The information needed for each type of decision varies, becoming more specific at the permit stage. The decision sequence is one of focusing, geographically, and focusing on key issues over time. At the area identification level, the information required is usually broad in geographic scope. Of primary concern to MMS is the distribution of petroleum throughout the planning area. States are most concerned about the location and extent of biological resources in relation to expected drilling activity.

Concurrent with the identification of the lease area, stipulations are analyzed in the EIS process as to their effectiveness in reducing impacts. The location of drilling activities is still not known at this stage, so that many stipulations provide a mechanism for more information to be generated. Finally, significant new information about a specific site is often generated before a permit is granted. This information is included in the plans for exploration, development and production, and oil spill response.

There appears to be a clearer relationship between information and decisions for stipulations and permits than for deferrals. Compared with deferrals, as now used, stipulations and permit conditions apply more directly to specific habitats or operating procedures, and they frequently involve the generation of additional information.

Chapter 3, Prelease to Exploration: Case Studies, presents four case examples of OCS decision making from the Atlantic, Gulf of Mexico, and Alaska regions:

- o Georges Bank, where highly valued fisheries have led to continuing controversy over four proposed lease sales.
- o The Eastern Gulf of Mexico, showing a variety of techniques for resource protection during exploratory drilling.
- o The Middle Atlantic, for which the applicability of oil spill trajectory models has been a key concern.
- o The Beaufort Sea, where endangered whales and subsistence hunting have been a focal point of decision making.

The cases focus on the area identification process, lease stipulations, and permit conditions through the exploration phase. They reveal the interplay between decision relevant information and other factors such as political influence and organizational behavior.

The energy development policies of the Department of the Interior and its jurisdiction over OCS leasing dominate the decision arena. Of the cases reviewed only Alaska has a state offshore leasing program. The other states show little interest in potential benefits from offshore development and so are largely reactive to federal policies and the leasing program.

OCS decision making can involve a significant amount of negotiation and compromise. The character of negotiations can be attributed to several factors, including state policies and attitudes, petroleum resource potential in the region, and the nature of and values associated with ocean and coastal resources.

Massachusetts has fought each sale in court and has relied heavily on political influence to restrict leasing activity. Florida has opposed leasing in certain areas but has accepted exploratory drilling generally and has worked to develop specific control measures and provisions to generate additional information. Petroleum resource potential is much higher in the Eastern Gulf than on Georges Bank, while fisheries values are lower, suggesting incentives for MMS to negotiate more with Florida.

North Carolina negotiated an agreement with MMS to protect nearshore resources and to assure that oil spill trajectories could be predicted adequately. However, they feel the terms of their agreement have not been fully honored. Alaska has generally been able to fashion acceptable compromises to protect valued resources, as in the evolution of the seasonal drilling restrictions through successive lease sales. Alaska has

received considerable federal agency attention and funding, partly because of high petroleum resource potential.

Study programs and mitigating measures reflect regional ocean environments and biological resources. Within limits, the decision arena shows responsiveness to regional concerns. The four cases represent extremely different ocean environments. For the highly valued and sensitive Straits of Florida region, Florida achieved a lease cancellation at the 5-Year Program stage. Alaska continues to have concerns about whale feeding habitat and about safe operations in the harsh Arctic environment. Lease sale stage deferrals and stipulations are used to address these concerns. On Georges Bank, ocean gyre currents and the highly valued fisheries resources have stimulated greater opposition to leasing. And the dominant oceanographic influence of the Gulf Stream has shaped the debate over leasing off North Carolina.

Management techniques seem to require a 5-10 year period of evolution through successive lease sales. Alaska seasonal drilling restrictions to protect bowhead whales have been refined over time. Florida's "biological resources" stipulation has evolved to increase protection of live bottom habitats.

There is continued disagreement over the adequacy of resource information to guide OCS decision making. As discussed in Chapter 1, this results from a variety of factors ranging from high technical uncertainty to differences in underlying values.

The states have relied on national level political action to influence OCS leasing decisions. Restrictive provisions on Department of the Interior appropriations bills have been the clearest type of political influence on OCS leasing.

The interests and responsibilities of non-MMS federal agencies often coincide with the concerns of states. Thus, the application of environmental laws by these agencies can lead to improved information and management controls. The Endangered Species Act has the clearest influence. The NPDES program of EPA and safety controls applied by the U.S. Coast Guard are other important controls.

Chapter 4, **Bringing Oil Onshore**, describes the California experience at the development and production stages of OCS oil and gas projects, when oil and gas is brought onshore for processing. The

California and Santa Barbara county context is presented along with details from three case examples: ARCO's Coal Oil Point Project, Exxon's Santa Ynez Unit, and Chevron's Point Arguello Project. The cases illustrate different approaches taken by major oil companies, and they highlight how a local government can develop a permit process to mitigate local environmental, socioeconomic, and infrastructure impacts and concerns.

County policies and the development of oil and gas projects have evolved together. The County initiated studies (some of which were funded by the oil companies) to gather the needed information for policy formation at the same time as project applications were being reviewed. This increased the potential for confrontation and delay. As the County gained experience from the environmental review of each project, it was able to apply what it learned to new project proposals.

County staffing needs were defined more clearly as experience with project review progressed. The staff has grown from two full-time energy specialists to as many as 24, expanding and contracting with its work load.

Industry is required to pay a substantial part of the costs of permit processing and mitigation programs administered by the County. The industry is usually willing to mitigate impacts or spend money up front on new studies if the requests are made early in the process and there is reasonable expectation of project approval.

The Joint Review Panels used to develop impact statements have fostered interagency communication and information sharing at early stages of the process. JRP's were used for each case study and their effectiveness has increased with experience.

Area studies provide essential information for onshore planning. Area studies provide a reasonable projection of total buildout needed to develop an oil and gas field. Thus, better information about future activities is available earlier in the process so that cumulative impacts are addressed and onshore permitting can proceed with greater certainty.

Good relations between the industry and the County are important. The approach to the permitting process varied considerably from company to company. Exxon took a hard-line approach, Chevron was willing to provide "extras," and ARCO was a "good neighbor," up to a point. The County and the industry are now more sensitive to the needs of one another and cooperation between the two is on the upswing.

County permit and mitigation policies have evolved incrementally and are slowly becoming standardized. Project review today relies more on pre-established sets of responses than on ad hoc analysis for each application. Permit conditions incorporate performance standards and require best available control technology. Mitigation requirements are established more scientifically and mitigation funds are distributed through prescribed programs.

Longer-range planning is beginning to emerge. Area studies try to forecast future development scenarios. The new California Comprehensive Offshore Resources Study attempts to inventory existing sources of information and assess regional impacts of both federal and state projects. County mitigation programs are now seeking to anticipate cumulative impacts and address them in a systematic way.

Chapter 5, Organizing for OCS Participation, describes four organizational arrangements designed and implemented by states and others that have been particularly useful in OCS analysis and decision making:

- o *Florida's Environmental Policy Unit* in the Governor's office, which has provided a consolidated approach to OCS planning, and which has been particularly active in the 5-Year Program, prelease, lease, and exploration drilling phases.
- o *Alaska's "project consistency" regulations*, which establish a coordinated and expedited process for determining whether development projects are consistent with Alaska's Coastal Management Program.
- o *California's use of Joint Review Panels*, made up of the lead federal, state and local agencies, to oversee the preparation of a joint Environmental Impact Statement/Environmental Impact Report for a complex OCS related development and production project.
- o *A Joint Oil/Fisheries Committee*, with representation from each industry, which serves as a forum for discussion, research, negotiation and mediation.

These organizational arrangements have affected the outcome of decisions in important ways, and they have provided a continuing process for receiving, organizing, and using OCS-related information.

Power relationships shift among the participants as a result of the new procedures. The new organizational arrangements are not simply neutral coordination vehicles. They change the character and quality of decisions. Information is packaged in new ways and certain information is elevated in importance. Agencies are assured a place at the decision table where they have greater opportunities to influence the results.

For each of these new arrangements to work, a coordinating office must be established and paid for. In general these arrangements required a commitment from government of about \$200,000 per year for the core staff during the prelease, lease, and exploration stages. This does not account for the time of people in related agencies who participate as well. Once oil is found and production projects are proposed, governmental staff costs are much greater.

Leadership plays an important role in these new organizational arrangements. At the Governor's office level in Florida, Alaska, and California, there is an official who is given responsibility for knowing the entire process and its idiosyncracies, and assisting and prodding that process so that it works efficiently.

The organizational arrangements have been carefully outlined by law or agreement. Participants, timetables, criteria for review, and other such matters are specific. Effective coordination appears to require a good bit of structure. It is not left to chance.

Private interindustry arrangements for mediating disputes or proposing policy or doing research can be extremely valuable. These work best when dealing with issues of direct interest to and under the direct control of the affected industries. However, most OCS-related disputes have public policy aspects to them such as environmental, recreational, esthetic, or cumulative benefits or costs. Negotiation and mediation among private interests should be done as an integral part of an essentially public process.

Chapter 6, General Conclusions, draws from the entire study.

1. *The Outer Continental Shelf Lands Act (OCSLA) encourages a rational model of decision making for OCS oil and gas leasing and development.* It calls for a top-down approach whereby the Secretary of the

Interior balances the OCS energy, revenue, and environmental needs of the country. For a variety of reasons, the rational model breaks down in practice. People have widely varying perceptions about tolerable levels of risk, the value of environmental resources, and the sufficiency of information for decision making.

2. *An additional model for understanding OCS decision making is that of bargaining and negotiation among MMS, state and local officials, other public agencies and private interests.* At virtually every stage of OCS development there is an intense and ongoing dialogue among many players. At each stage the issues of concern go through a new iteration, and different decision tools are used to accommodate the interests.

3. *MMS plays a central role in this negotiation arena.* They define the steps in the decision process, the subject matter and scope of decisions, and the timetable for particular lease sales and for the entire leasing program.

4. *State and local governments play a lead role in the negotiation process as well. They have become the policy protagonists for environmental and socioeconomic issues.* Through Congressional, legal, and political action, and through mandatory consultation requirements, issues important to the states have been forced onto the MMS agenda.

5. *States need a four-pronged approach to preparedness: a responsive structure within state government that has the capacity to maintain the dialogue over many years; policies that can guide the formation of negotiating positions; accessible information that helps to shape the policies and defend them; and an overall strategy for effectively using the MMS process to achieve state objectives.*

6. *The structure established in state government must be authoritative and competent.* It is authoritative if it has the full confidence of the chief executive and is backed by law and/or enforceable policies addressing OCS issues. It is competent if it has sufficient people technically qualified, and senior enough, to deal with OCS issues.

7. *A state must have coastal and ocean management policies for guiding its substantive decisions so that they are principled.* Policies can be represented in areas designated for maximum levels of protection or in

preferred locations for industry. They can include requirements for consolidating facilities or priorities for existing uses.

8. *State and local OCS personnel must have the skills, information, and resources needed to be effective representatives.* In addition to having technical qualifications appropriate for OCS decision-making, these personnel need access to specialists in state agencies or universities with a wide range of disciplinary skills.

9. *A state needs a conscious strategy for linking its structure, policies, and information to the process and decision alternatives of MMS.* There are discussion forums and management tools within the process that provide opportunities for assertion of state interests.

10. *States can learn from the experience of other states, even though they differ significantly in ocean environments, coastal economies, political culture, and petroleum resources.* Massachusetts, North Carolina, Florida, California, and Alaska have had to deal with problems of structure, policy, information, and strategy. Their experience is a point of departure for a state first studying how to face OCS development.

11. *Scientifically derived information is an important part of the OCS process, but it is only one part of a complex arena that includes legal, political, and emotional forces.* Greater quality and utility of scientifically derived information can improve the dialogue among the parties. Scientifically derived information does not determine the optimal outcome in OCS development: rather, it is a basis for negotiations among the parties. It is part of the language of the political dialogue.

12. *Scientifically derived information is most useful if it is directly relevant to the OCS decision-making process.* The information must be made to fit the dialogue -- the right amount at the right time that addresses the issues and the alternatives under discussion.

13. *The biggest problem in the development and use of scientific information is in determining what it means.* The concepts of risk and value are entwined with human judgment -- and one person's judgment can differ dramatically from another's.

14. *The MMS areawide leasing policy, in which large amounts of the OCS are initially identified as available for lease, detracts from informed dialogue and negotiation with the states.* So little is known about industry

interests and natural resources that the debate is more political than technical. MMS insists that a focusing of analysis and review will occur at later stages in lease sale planning. But, most states doubt that adequate analysis will be performed and that decision alternatives will be preserved through the process. Thus, the battle for intervention continues in Congress, the courts, and political arenas.

15. The MMS environmental studies program does not match well with the diversity of information needed by state and local interests. Efforts to reform the program should continue. MMS stresses offshore studies while states appear more interested in coastal and land use issues. The timing of studies may not allow the results to be effectively used, and many issues important to the state may get insufficient attention.

16. MMS has already begun to embrace the task force "movement," and this is a positive trend that should be continued. Because the bargaining model of decision making is a major part of the process, the formation of teams of officials from different levels of government and different functional agencies and interests will allow quicker exchange and translation of information and rapid identification of issues and preferences.

17. MMS should attempt to find ways to share more geologic and petroleum resource information with state and local governments. This would improve the planning process and build more trust between the parties, since there would be less uncertainty about likely oil and gas resources.

18. States should think more broadly about "ocean management" in general, rather than become preoccupied with OCS oil and gas issues alone. Other ocean uses, such as fisheries, ocean dumping, ocean incineration, military activities, mining, and recreation, become important in the OCS oil and gas dialogue because oil and gas activities affect other users of the ocean, as well as the ocean environment.

19. The state of Oregon offers the leading example of state-level ocean planning in the U.S. By 1990 the state will have prepared an Ocean Resources Management Plan covering its territorial sea and beyond to the EEZ adjacent to its shores. The entire range of uses must be addressed.

20. *States face many obstacles in forging an effective ocean management strategy. Chief among these obstacles are the organizational constraints built into the existing framework of government. Creating linkages and complementary policies among agencies as diverse as those concerned with fisheries, water quality, and marine mineral development is a large task. This study shows that the linkages and policies are beginning to be formulated in small but important ways throughout the country. Experience in resolving issues in OCS oil and gas development, then, is an important step toward improved ocean management.*

1

The Decision Arena for OCS Oil and Gas

The Executive Summary set forth the rationale, approach, and organization of this study and reviewed conclusions from each of Chapters 2 through 6. This chapter describes the laws that apply to OCS oil and gas development, and the management framework at the federal level. The Washington State context for OCS participation is then presented. The chapter concludes with a discussion of the role of information in OCS decision making, the particular contributions and limitations of MMS Environmental Studies Program, and the importance of information and its use to the states.

OCS OIL AND GAS

The U.S. Outer Continental Shelf (OCS) is an immense ocean area extending from Alaska's frozen Beaufort Sea to the coral reefs of the Florida Keys. The federal government exercises jurisdiction over oil and gas resources on the continental shelf and over all resources beyond the state-controlled territorial sea out to the 200 nautical mile limit of the U.S. Exclusive Economic Zone (EEZ). The U.S. Department of the Interior (DOI), through the Minerals Management Service (MMS), operates a leasing program and manages oil and gas development throughout the OCS. The program is conducted under the Outer Continental Shelf Lands Act (OCSLA, 43 United States Code 1331-1356) as amended in 1978 (43 USC 1801-1866).

Figure 1.1 (a) & (b) The U.S. Outer Continental Shelf. Planning areas designated by the Minerals Management Service, Department of the Interior.

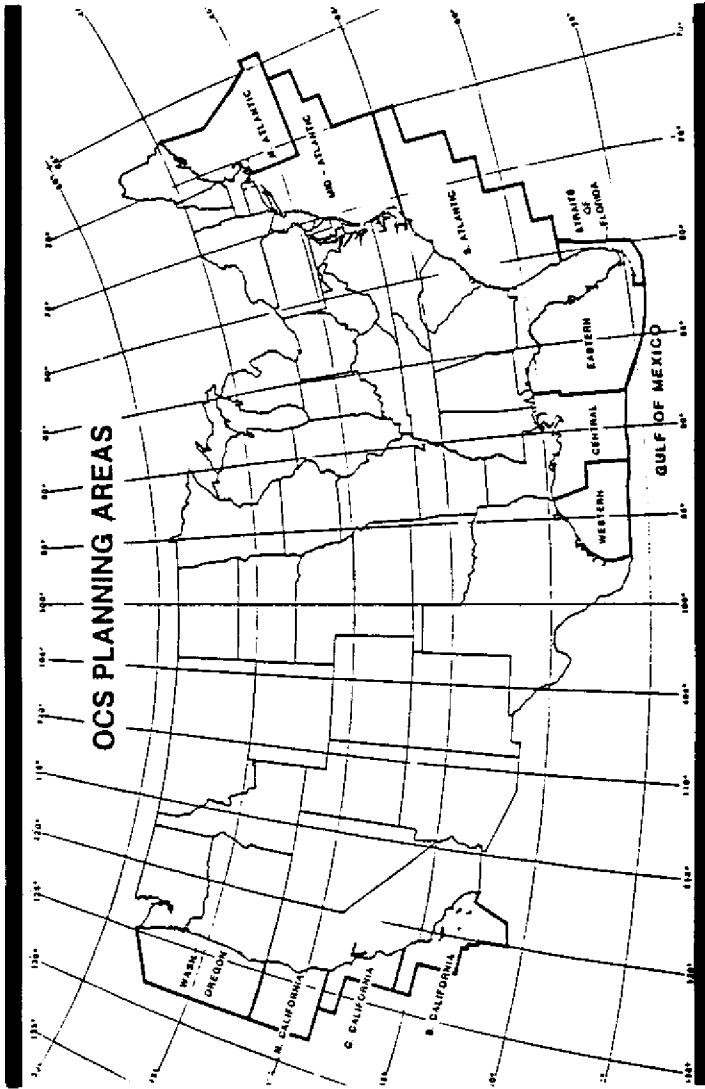


Figure 1.1 (a) Source: Interior, 1987.

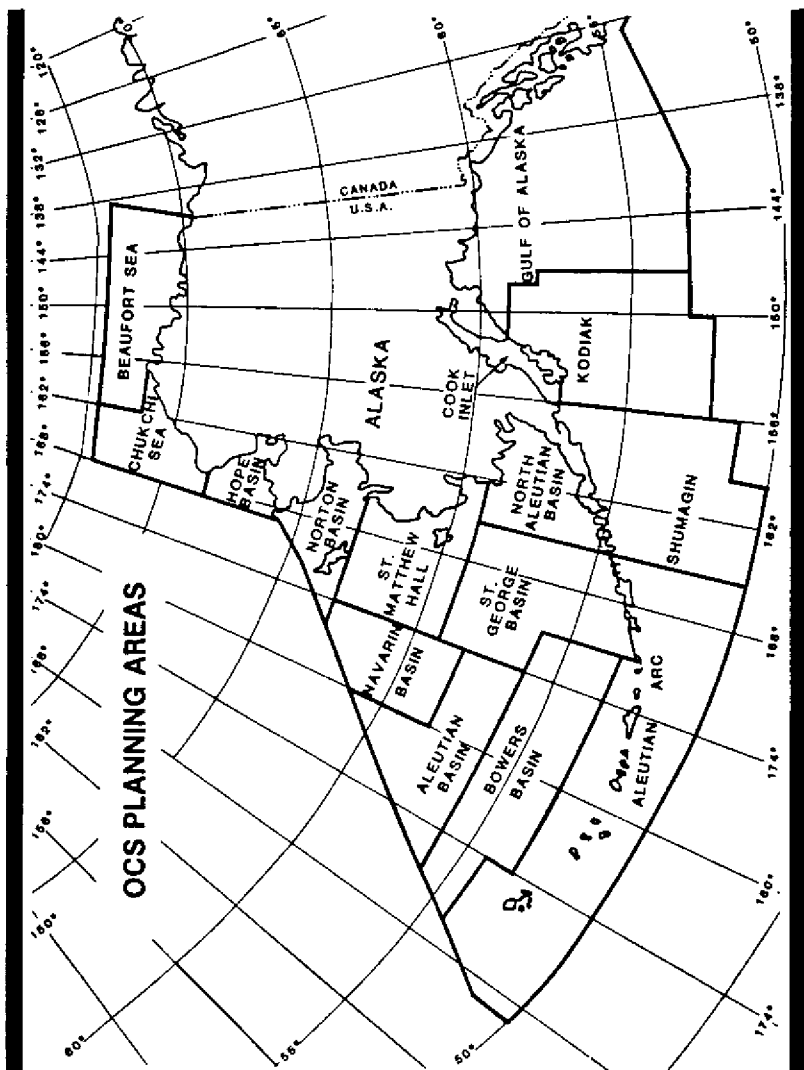


Figure 1.1 (b)

Oil and gas have been produced from the seabed since the 1890s, when drilling was conducted from piers in California. By the 1930s, the Gulf of Mexico emerged as the major region of offshore petroleum resources. Encouraged by relatively shallow waters and generally calm seas and by a favorable public reception within the region, the offshore industry grew and developed in the Gulf. To date, more than 95 per cent of OCS oil and more than 99 per cent of OCS gas production have come from the Gulf of Mexico (MMS 1987).

The Santa Barbara Channel area, in California, is the only other region of OCS production. There, development increased dramatically in the last decade. Some 29.5 million barrels were produced in 1986, compared with Gulf production of 319.5 million barrels (MMS 1987). Oil has been produced in state waters of Alaska's Cook Inlet, and one OCS project is in the final stages of permitting in the Beaufort Sea. Areas such as Washington and Oregon and the Atlantic coast are considered "frontier areas" because of the lack of proven oil or gas reserves.

For MMS planning purposes, the OCS is divided into the Atlantic, Gulf of Mexico, Pacific, and Alaska regions. The regions are further divided into 22 OCS planning areas, which are the units of analysis for individual lease sales (Figures 1.1a & 1.1b). Oil and gas industry interest in each OCS region ensures continued federal government interest in leasing. The Gulf and Pacific regions are at different stages of maturity, and each has extensive proven reserves and unexplored frontier areas. The vast Alaska region continues to hold promise for frontier discoveries. Considerably less potential is recognized for the Atlantic OCS region. Conditional mean resource estimates for the 22 OCS planning areas are shown in Table 1.1.

The offshore petroleum industry is highly sensitive to world oil prices. In the 1970s, when the OPEC oil embargo caused a dramatic rise in the price of oil, the incentive to explore the offshore zone increased substantially. Discoveries on Alaska's North Slope were heralded as a start toward national energy self-sufficiency, and DOI's program for offshore leasing was accelerated. As prices stabilized and then fell, the greater exploration and production costs for offshore oil reduced new exploration to a minimum.

In the late 1960s and 70s, heightened environmental awareness prompted passage and implementation of a variety of new laws. These

Table 1.1 Planning Area Resource Estimates.

PLANNING AREA	CONDITIONAL RESOURCES					NUMBER OF		PLAT-FORMS
	NO. SALES	OIL MMBBL	GAS (BCF)	MILLION BOE	MPCH+	EXPL. & DEL. WELLS	DEVL. & PROD. WELLS	
North Atlantic	2	49	961	220	0.30	18	26	2
Mid-Atlantic	1	50	837	199	1.00	10	23	1
South Atlantic	1	70	1288	299	0.25	11	35	1
W. Gulf of Mexico	5	437	6155	1532	1.00	713	912	76
C. Gulf of Mexico	5	893	7366	2203	1.00	1113	1428	119
E. Gulf of Mexico	2	62	329	120	.99	19	36	2
Washington/Oregon	1	58	1043	243	0.20	10	29	1
N. California	2	231	1023	413	0.60	20	48	2
C. California	1	153	286	204	0.65	10	24	1
S. California	2	413	627	524	1.00	184	425	9
Gulf of Alaska	1	93	1443	350	0.08	11	35	1
Kodiak	1	95	1840	422	0.05	12	42	1
Cook Inlet	1	179	298	231	0.03	10	23	1
Shumagin	1	48	1363	291	0.03	10	29	1
N. Aleutian	1	173	1258	397	0.20	12	39	1
St. George	1	389	3625	1034	0.22	35	102	3
Navarin	2	1920	2336	2336	0.27	82	229	7
Norton	1	109	500	198	0.15	10	19	1
Hope	1	145	1539	418	0.02	13	40	1
Chukchi Sea	2	1152		1152	0.20	37	105	3
Beaufort Sea	2	627		627	0.70	22	61	2

+ MPCH denotes marginal probability of commercial hydrocarbons. For the Chukchi Sea and Beaufort Sea Planning Areas, the conditional mean gas resources estimated to exist are assumed to be noneconomic based on current advances.

++ Projected build-out if resources are located and developed.

Source: Interior, 1986a.

laws apply to OCS oil and gas in a variety of ways (Appendix A provides a complete list of OCS related laws):

- o The National Environmental Policy Act of 1969 (NEPA) requires federal actions potentially affecting the environment to be evaluated for adverse impacts. A finding of no significant impacts (FONSI) must be reached, or an environmental assessment conducted, or an environmental impact statement prepared. For OCS activities, EIS's are prepared for the 5-Year Program, for each lease sale, and for the first development and production plan in a planning area.
- o The Federal Coastal Zone Management Act of 1972 (FCZMA) established policies for the balanced protection and wise development of coastal resources. The Act provides funding and authority to states to develop state coastal management programs. Federal actions directly affecting a state's coastal zone, such as oil and gas related permits, must be consistent with that state's management program, once it is approved by the federal Office of Ocean and Coastal Resource Management (OCRM/NOAA/DOC).
- o The Endangered Species Act of 1973 (ESA) provides for federal designation of species determined to be endangered or threatened. The U.S. Fish and Wildlife Service (USFWS/DOI) or the National Marine Fisheries Service (NMFS/NOAA/DOC) must assess and prepare a biological opinion determining whether major federal actions would jeopardize any of these species. Actions likely to cause jeopardy are prohibited.
- o The Marine Mammal Protection Act provides protection to all marine mammals. The act defines a variety of actions to constitute an illegal "taking" of marine mammals, but does provide for exemptions and permits for such uses as live public display, takings incidental to commercial fishing, and subsistence hunting by Alaska natives.
- o Title I of the Marine Protection, Research, and Sanctuaries Act of 1973 (MPRSA) is called the Ocean Dumping Act. It prohibits dumping any material into ocean waters except by permit of the Environmental Protection Agency, as authorized in the Act or in the Clean Water Act. Title II of the MPRSA directs the Secretary

of Commerce to conduct a continuing program of research on the effects of ocean dumping. Title III directs Commerce, through NOAA, to evaluate, designate, and manage areas of the marine environment as National Marine Sanctuaries.

- o The Clean Water Act (CWA) prohibits unauthorized discharge into waters of the United States, and directs EPA to conduct the National Pollutant Discharge Elimination System (NPDES) by issuing general permits or individual permits. EPA has authority over all ocean discharges.
- o The Clean Air Act (CAA) directs EPA to enhance air quality through the administration of national air quality criteria and standards and through approved state air quality control programs. State and EPA authority covers oil and gas activities onshore and in the territorial sea. The OCSLA, however, gives authority to MMS to control emissions from OCS oil and gas activities. After continued legal dispute over MMS air quality regulations, Congress has sanctioned a negotiated rulemaking procedure, involving MMS, EPA, and the State of California, which is now under way.
- o The Rivers and Harbors Appropriations Act of 1899 authorizes the Secretary of the Army through the U.S. Army Corps of Engineers to issue permits for the placement of structures in navigable waters of the United States. Permits are required for the placement of oil and gas drilling rigs.

Each new law meant that additional resource information should be taken into account in decisions about OCS leasing and development. Each provided new avenues by which federal resource agencies, state and local governments, and private interest groups could comment on and question the decisions. The new laws created uncertainty in the leasing process and added requirements to which the oil and gas industry and the development agencies were unaccustomed. It is only now that some level of increased mutual understanding and predictability is being gained among government, industry, and the public.

MANAGEMENT OF LEASING AND DEVELOPMENT

The Bureau of Land Management and the U.S. Geological Survey shared responsibilities for OCS leasing until 1982, when divisions of these agencies were combined into the Minerals Management Service. MMS orchestrates a highly structured process for gathering information and conducting leasing through a series of stages and specific decisions. MMS plans and conducts the leasing program, but ultimate decision authority rests with the Secretary of the Interior (SOI). Figures 1.2 and 1.3 show the steps in the leasing program, including the 5-Year Program and the prelease and postlease phases.

Provisions of the OCSLA assure that many parties are involved in decisions about the timing, location, and character of OCS leasing. Moreover, the laws described above and listed in Appendix A provide direct input to OCS decisions which must be incorporated into the DOI/MMS process. At each stage, opportunities exist for assembling new information and for dialogue and negotiation about OCS oil and gas decisions.

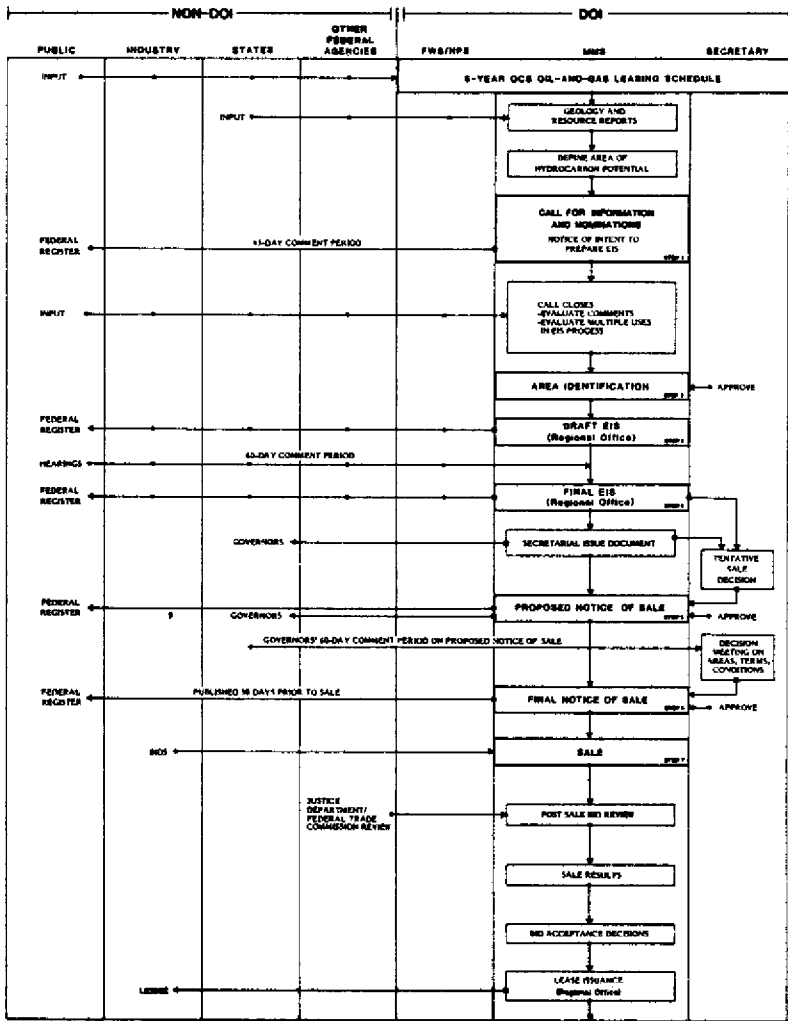
It is in this context that the following four stages in the process are described.

The 5-Year Program

Section 18 of the OCSLA calls for a continuing program of oil and gas leasing. DOI/MMS periodically prepares a 5-Year Leasing Program of proposed sales which, in the judgment of the SOI, will best meet national energy needs. It is at this stage that the policies of the current federal administration are projected in the pace and scope of proposed leasing.

The Program indicates the size, timing, and location of leasing activity. It is based on current resource estimates and rankings of industry interest in exploratory drilling, but also must consider the productivity and sensitivity of regional ocean environments and must incorporate a social benefit/cost analysis for each lease sale. An Environmental Impact Statement (EIS) is prepared, and a proposed final 5-Year Program is submitted to Congress, the U.S. Attorney General, and governors of coastal states. Congress must vote to approve the 5-Year Program and governors' comments must be considered.

Figure 1.2 OCS Leasing Process -- Prelease Phase.



Source: Interior, 1986b.

Thus, the 5-Year Program provides for limited negotiation between DOI and other interests. States take an active role in this debate. Florida, for example, recently reached an agreement on the Program which cancelled an entire sale (See Chapter 3). Washington State, by contrast, has joined other states in suing DOI over the adequacy of its planning.

Lease Sale Planning

When the 5-Year Program is approved, all OCS leasing and development activity takes place within the context of lease sales held in individual planning areas. As shown in Figure 1.2, a number of specific steps are involved:

- o *Request for Interest.* A new step applying only in frontier areas. Solicits industry's expression of willingness to bid on tracts within the lease planning area. If little interest is shown, the sale may be cancelled.
- o *Call for Information and Notice of Intent to prepare an EIS.* Solicits industry identification of tracts it may wish to bid on and state's description of particular interests or concerns. The Notice of Intent solicits scoping comments for the lease sale EIS, and public scoping meetings are held in the affected region.
- o *Area Identification.* The formal step in which DOI interprets the results of the Call for Information, compares it with the 5-Year Program, and specifies the areas to be analyzed for leasing and considered for deferral in the lease sale EIS.
- o *Draft EIS.* A proposed action is described and alternatives considered, including deferral alternatives, lease stipulations, and the "no sale" alternative. Comments are solicited from all interested parties.
- o *Final EIS.* Revisions to the Draft EIS and responses to all comments that were submitted.
- o *Secretarial Issue Document.* Summarizes and interprets results of the sale planning and EIS process for the consideration of the SOI; describes deferral alternatives and mitigating measures as "options for decision."
- o *Proposed Notice of Sale.* Identifies the area proposed for leasing and describes general features of the lease sale such as bidding requirements and lease terms. Included are all stipulations and information to lessees proposed for the leases. The "section 19 letter" is sent to governors of affected states, describing the SOI's process in reaching the decision and soliciting comments.

- o *Section 19 Comments.* Governors comment on the proposed notice, with respect to the size, timing, and location of the sale and proposed stipulations and information to lessees.
- o *Final Notice of Sale.* Results of the SOI's consideration of comments on Proposed Notice, including any changes thereto. Sent to governors along with "balancing letter" stating reasons for accepting or rejecting governors' comments.
- o *Sale.* Normally held 30 days after publication of Final Notice in the Federal Register. Sealed bids are submitted and considered along with qualifications of the bidder: high bids are accepted or may be rejected if too low. Accepted bids are public information.

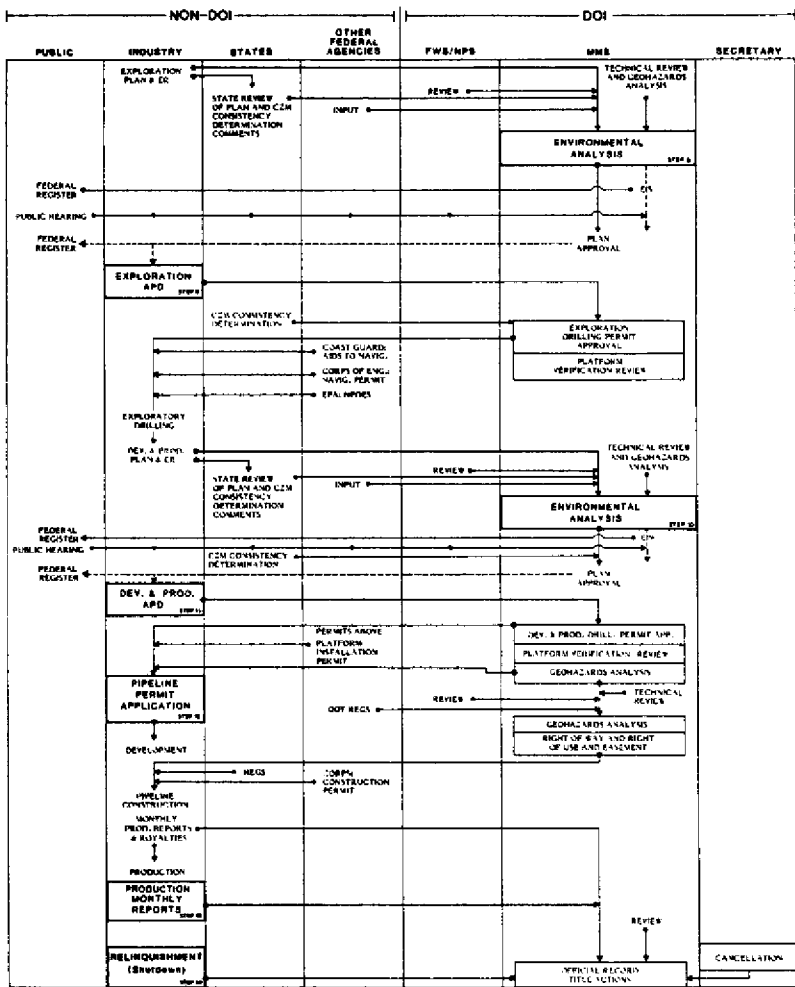
Although it involves a number of discrete steps and the separate EIS and Section 19 processes, lease sale planning is really a continuous process of dialogue and negotiation among the participants. In addition to state and local interests, other federal agencies comment on the lease sale EIS. For example, it is here that an Endangered Species Biological Opinion would be prepared in response to the proposed federal action of holding the sale. Also, a Memorandum of Understanding between MMS and EPA assures that evaluation for an NPDES general permit is performed in the same time frame as the EIS.

Often, the same issues are revisited throughout this process. The adequacy of the information used in decision making is reviewed in the EIS process, and the Section 19 process involves the decisions themselves. Sometimes the state will continue to assert that the sale should not be held. More often, the debate involves specific deferral alternatives and lease stipulations. Also, a state and DOI may disagree over jurisdictional boundaries, and Section 7 of the OCSLA provides for individual agreements between DOI and a state, allowing the sale to move ahead in spite of the dispute.

Drilling Permits and Consistency Review

When a lease is granted, the initiative to conduct exploratory drilling lies solely with the lessee. The companies have based their bidding on proprietary information gained from seismic surveys and past drilling in the area. The decision to drill on a specific tract is based on a variety of factors including the proprietary information about resources, current or expected oil prices, other company opportunities and commitments, and the relative costs of drilling in a particular ocean region and environment.

Figure 1.3 OCS Leasing Process -- Postlease Phase.



Source: Interior, 1986b.

To begin the exploratory drilling decision process, the company confers with the MMS regional office and with states to determine what additional surveys or analysis may be required. As shown in Figure 1.3, the applicant prepares a Plan of Exploration (POE) describing the intended location of drilling, the equipment to be used, and any measures planned to mitigate special concerns. An environmental report and an oil spill contingency plan are also prepared. Together, these documents accompany an Application for Permit to Drill (APD) which is submitted to the MMS region. A similar process is involved in development drilling permits if producible resources are located.

An important power conferred on the states by the Federal Coastal Zone Management Act (FCZMA) is triggered by the drilling permit application. This is the requirement that federal actions directly affecting a state's coastal zone must be consistent with the state's approved Coastal Management Program. Under a 1984 Supreme Court decision, the act of leasing in federal waters is not construed to "directly affect" the coastal zone (*Interior v. California*, 464 U.S. 312, 1984). Thus, due to the language of the FCZMA, consistency provisions do not apply at the lease sale stage. Other court decisions have upheld the consistency provisions as they apply to permits subsequent to the sale, but there continues to be uncertainty about the scope of state powers.

State consistency review, then, involves permits to conduct exploratory and development drilling and, thereby, the plans of exploration, development and production plans, and oil spill contingency plans. Also, non-MMS federal permits are subject to consistency review. States use this review to negotiate directly with lessees and with other agencies for permit conditions. The Alaska case in Chapter 5 discusses one innovative approach to consistency review.

Onshore Development

Oil or gas produced on the OCS must come ashore in some form and at some location. Because of oil spill safety concerns, potential air quality benefits, and costs savings, pipeline transportation directly to shore is now preferred over offshore processing and tanker transport. For this reason, when the development and production of an offshore field is contemplated, the company will normally design a complete project including offshore and onshore components.

Table 1.2 Minerals Management Service/Department of the Interior Policy and Regulatory Documents. This listing is not exhaustive, but is intended to show the general hierarchy of regulatory control.

Documents	Purpose or Role, Policy	Level of State Input	Means of State Input	Source or Location
Outer Continental Shelf Lands Act (OCSLA)	Conduct leasing program; protect environment; balance among users; ensure fair market return	Low; very infrequent	Influence Congressional Amendments	43 USC 1331-1356
OCSLA Amendments	Fishermen's Contingency Fund, Oil Spill Contingency Fund	Low; very infrequent	Influence Congressional Amendments	43 USC 1801-1866
Regulations implementing OCSLA	Establish leasing procedures, define environmental studies program	Low; infrequent	Comment, testify during rulemaking procedures	
Prelease Process	Define steps in prelease information gathering, EIS review, Notices and Sale			30 CFR 256.23-50 40 CFR 1500-1508
Postlease Process	Environmental analysis, drill permitting, pipeline provisions production; lease cancellation	Low; infrequent	Comment, testify during rulemaking procedures	15 CFR 930 30 CFR 250.10-96 256.32,76,77 40 CFR 1500-1508
Air Quality Regulations	Control emissions from offshore rigs and transport vessel	Limited; current negotiated rulemaking for California	Comment, testify during rulemaking procedures	30 CFR 250.57

Table 1.2, continued.

Documents	Purpose or Role, Policy	Level of State Input	Means of State Input	Source or Location
OCS Orders -identification of wells -drilling operations -plugging and abandonment -determining producibility -production safety system -well completion -pollution prevention -platforms and structures -pipelines -production rates	Specify accepted industry standards; detailed acceptable procedures; incorporate technical documents by reference, such as American Petroleum Institute Documents	Low; infrequent	Rulemaking procedures	By Region, in Federal Register; also from MMS Regional Offices
Notices to Lessees	Add special procedures to OCS Orders; notify of special biological, safety, or regulation concerns	Moderate; infrequent	Influence discretion of Director or Regional Director	By Region, in Federal Register; also from MMS Regional Offices
Lease Stipulations	Sets conditions on leases for site specific surveys, operation controls, training programs, spill response, etc.	Moderate; with each lease sale	Influence discretion of MMS/DOI officials through lease sale EIS, and Section 19 comments	Text in FR up to 1987. After, regional offices. Attached to individual leases as applicable
Information to Lessees	Describe special environmental, safety, siting, legal concerns; do not establish new regulatory requirements by MMS	Moderate; with each lease sale	Same as stipulations	Same as stipulations

It is at this stage that the focus of regulatory control shifts from the federal MMS process to the jurisdiction of state, local, and tribal governments. As in exploratory drilling, state consistency review applies for development and production permits offshore. For the onshore components, state and local agencies bring a variety of regulatory powers to the review process:

- o Siting, design, and operational controls for pipeline corridors.
- o Coastal siting permits for pipeline landfalls and marine terminals.
- o Land use controls and air and water quality certifications for processing and land transport facilities.

Agencies in California have taken the lead in using a joint review process to produce EIS's for projects with both offshore and onshore components. (See Chapter 5.) Through this forum, effective coordination among the diverse jurisdictions has been achieved, and development projects are designed with a broader set of concerns in mind.

In general, OCS management decisions are recorded in a number of ways, each of which affects leasing and the conduct of activities under a lease. These regulatory and informational provisions are described in Table 1.2, which shows the application of each type of provision and suggests which provisions draw the most direct state and local interest. MMS regulations, for example, apply equally to all leasing activity and are not subject to frequent change. OCS Orders and Notices to Lessees are similar throughout the OCS but are modified occasionally to account for regional conditions and concerns. Lease stipulations and Information to Lessees clauses are specific to a given lease sale and are more subject to outside influence.

STATE AND LOCAL CONCERNS

State and local governments, often joined by environmental and fishing interests and in some cases tribal governments, have taken their OCS responsibilities very seriously. Indeed, few other natural resource issues have engendered so much controversy or produced so complex a decision process. The reasons for this are many:

- o Whether through its innate appeal, through our literature of the sea, or as a result of cultural affiliation, people hold strong

emotional ties to the oceans. These ties influence our perceptions of acceptable risk.

- o Traditional uses of the ocean, such as fisheries and coastal recreation, are significant generators of economic activity. Through their own laws and constitutional mandates, states and local governments have responsibilities to protect these resources and foster their continued use.
- o By contrast, the stakes in oil and gas development are also very high. Our society tends to mistrust government and industrial interests when there is the belief that large potential profits are involved.
- o Though formal jurisdiction is clear, ocean resource uses cross governmental lines of concern and responsibility. For OCS leasing and development, this is clearly seen in concerns over fisheries and air quality impacts from offshore operations.

The benefits of OCS development tend to be national in scope, including significant federal revenues and increased domestic supply of petroleum products. The external costs of development tend to be borne by local communities in the form of infrastructure needs, environmental impacts, use conflicts, and "boom or bust" economic cycles. Increased local tax bases, transfer payments of royalties from the 3-6 mile zone (see Glossary entry for "8g"), and private mitigation are some of the mechanisms used to compensate for these costs. Many states and localities are convinced, however, that these benefits do not match the costs. The result is a highly contentious set of interactions among industry, interest groups, and federal, state, and local government participants.

THE WASHINGTON STATE CONTEXT

The ocean region offshore Washington and Oregon is treated as one OCS planning area. DOI has proposed Lease Sale 132 for this area, scheduled for April, 1992. As configured in the 5-Year Program the sale would encompass the entire zone from 3 miles to about 50-75 miles offshore. Washington and Oregon have asked for additional deferrals, including a large zone off the Olympic Peninsula, buffer areas surrounding the mouths of coastal estuaries, and specific fisheries habitats.

The Governor of the State of Washington has joined California, Oregon, Massachusetts, and the Natural Resources Defense Council in a suit against the Secretary of Interior. The suit claims the Secretary

performed inadequate analysis in the 5-Year Program EIS and that he failed to adequately balance between development and environmental values as called for in OCSLA Section 18. The American Petroleum Institute has intervened on behalf of the Secretary, and arguments were made before the U.S. Court of Appeals, Washington, D.C., in September, 1988.

Petroleum in Washington State

Past OCS activity in the Washington/Oregon planning area has been minimal. Lease Sale P2 was held in 1964, and twelve exploratory wells were drilled. Some petroleum was found, but none of it was considered producible. Seismic survey work has been conducted since that time and produced a major gear conflict incident in 1980. A survey vessel towed its equipment through an active dungeness crab fishery, resulting in the loss of more than 1200 pots. In addition to gear loss, the damage from the pots that continued to catch crabs on the sea floor was estimated at 5 percent of the crab resource offshore Washington State at that time (Williams 1983). The incident resulted in a 1982 Memorandum of Agreement between Washington State and MMS concerning scheduling and notification of fishermen for seismic survey permits.

Washington has served as a major staging area for the North Slope oil development and Trans-Alaska pipeline projects. Fabrication facilities have been active in Anacortes and Tacoma, and the pioneering "sealift" barge convoys to the North Slope occurred each year through 1987. Four related issues caused significant concern and controversy and are therefore part of the Washington experience:

- o The Northern Tier pipeline project was proposed in 1976. The proposal to transport Alaskan crude would have involved a major terminal at Port Angeles and a pipeline across Puget Sound. Permits were denied by the Washington Energy Facility Site Evaluation Council in 1982 (see Ecology 1983).
- o Two proposals were made for drilling-rig fabrication yards at Cherry Point in Whatcom County. Neither proposal obtained necessary permits, amid State concern for herring spawning grounds and fluctuating market conditions for drilling rigs. A major rig-yard siting study was conducted as a result of this controversy (Ecology 1984).

- o Size and construction requirements for oil tankers entering Puget Sound involved a major federal preemption issue. A U.S. Supreme Court case in 1978 (*Ray v. Atlantic Richfield Co.*, 435 U.S. 151) resolved the issue partly in favor of the U.S. and partly in favor of Washington State.
- o A major planning study was conducted by the Oceanographic Commission of Washington when it was expected that liquid natural gas or liquid petroleum gas (LNG/LPG) might be transported from Alaska (Oceanographic Commission of Washington 1978).

Currently, four major oil refineries and two smaller ones operate in the Puget Sound region, and approximately 150,000 barrels of crude oil are imported via tanker per day (Puget Sound Executive 1988). Partly as a result of the 1985 Arco Anchorage spill at Port Angeles, a major study of oil spill damage assessment methodology and regulation is under way at the University of Washington (Institute for Marine Studies 1988).

Planning for Sale 132

Washington State has begun to organize to address OCS issues. Prior to 1987, virtually all information gathering and monitoring was done by the OCS coordinator within the Shorelands Division of the Department of Ecology (Ecology), drawing on other state agencies and consultants as necessary. Studies funded through this mechanism have included a survey of distribution and abundance of seabirds over the continental shelf (Wahl 1984) and an OCS policy study (Ecology 1986). A conference on oil and gas leasing was held in June, 1987.

Also in 1987, the Chair of the Governor's OCS Work Group was assigned as Assistant to the Director of Ecology. The Chair has played an important role in convening upper-level state management on OCS coordination, leading the state in cooperation with Oregon and performing a liaison function with federal agencies and Congress. Ecology set up a new technical advisory committee in 1987 to advise it on OCS matters such as the Governor's policies and responses to MMS in policy and technical matters.

The 1987 legislature passed two laws broadening the inquiry into OCS issues and adding new parties to the discussion. Engrossed Substitute Senate Bill 5533 established the Ocean Resource Assessment Project

(ORAP) and required the director of Washington Sea Grant at the University of Washington to synthesize technical and scientific studies, identify existing information and data gaps, form a public/private advisory committee, and develop a plan for research for state participation in federal OCS oil and gas decisions.

In a parallel measure, the legislature established the Joint Select Committee on Marine and Ocean Resources and required that eight-member body (legislators from both houses and both political parties) to review existing state and federal laws and policies for marine resource management and to recommend policies to the legislature for implementation. The Joint Select Committee also has an advisory committee of public and private members.

Thus, by late 1987, there were three parallel activities in state government, each with its own special tasks and advisory committee. The three efforts have been fairly successful in defining their specific roles, coordinating meeting schedules, and sharing information that is generated. There is substantial overlap in the advisory committee memberships which helps to keep the key players in state, local, and tribal governments and in the private sector adequately informed.

Finally, there are proposed mechanisms by which Washington and Oregon can interact with MMS as planning proceeds. These include an existing informal two-state working group and a joint proposal to DOI for an intergovernmental task force. Oregon, for its part, has produced the informational "Oregon Ocean Book" (Parmenter and Bailey 1985), has completed a broadly focused territorial sea study (Good & Hildreth 1987), has developed specific policies on ocean resources, and is midway in the process of developing an ocean resource management plan called for by the Oregon State Senate Bill 630 (Oregon Ocean Resources Management Task Force 1988).

Existing Jurisdiction

Several existing types of jurisdiction among Washington State and local agencies will apply to OCS decision making:

- o Coastal counties and municipalities have land use permitting authority and shorelines permitting authority under approved Shorelines Master Programs. Counties may also have a role in granting easements for use of aquatic lands within their

- jurisdiction (Hildreth 1986). Local Air Pollution Control Authorities govern air emissions within the counties and may share jurisdiction in the territorial sea (Hildreth 1986). Local port districts have important management responsibilities in harbor areas.
- o Washington Department of Ecology (Ecology) oversees local Shorelines Master Programs and has state responsibility for consistency review under the Shorelines Management Act and the FCZMA. Ecology also is delegated authority for the National Pollutant Discharge Elimination System at the state level and coordinates with the Environmental Protection Agency regarding permits involving the territorial sea. Finally, Ecology Air Programs may share jurisdiction in the territorial sea with local Air Pollution Control Authorities (Hildreth 1986).
 - o The Shorelines Hearings Board rules on appeals to shorelines permits and shorelines master program amendments.
 - o Washington Department of Natural Resources (WDNR) manages aquatic lands within the state and controls rights-of-way for pipelines and leases for harbor development. The State Geologist is housed within WDNR, and the agency would be responsible for developing any State mineral leasing program.
 - o The Washington Department of Fisheries (WDF) manages all commercial fisheries in state waters and participates in the management of ocean fisheries through the Pacific Fisheries Management Council. WDF shares control of the Hydraulics Permit system, which applies to any project potentially affecting water flow as it relates to fisheries habitat.
 - o The Washington Department of Wildlife is responsible for managing and protecting wildlife and shares responsibilities for hydraulics permits.
 - o The Energy Facility Site Evaluation Council (EFSEC) conducts consolidated review for certain types of facilities. Some oil- and gas-related development would fall under the EFSEC process. The Governor must concur with decisions of the Council.

- o The Governor has sole responsibilities for direct comment on DOI actions through Sections 18 and 19 of the OCSLA. The Governor draws on the expertise and authorities of state and local agencies in formulating comments and can incorporate their comments directly.

Special Jurisdictional Issues

Washington State has a history of interaction with federal resource agencies in coastal areas, providing a basis of communication and mutual understanding through which future OCS issues may be addressed. Key issues have involved estuarine planning in Grays Harbor and the Columbia River, ocean dredge spoil disposal, and Puget Sound water quality. Due to the lack of OCS oil and gas activity, however, few of these interactions have included MMS.

In addition, the Olympic Peninsula represents a complex of overlapping jurisdictions. Tribal governments control some portions of the ocean beaches, and WDNR manages the remainder, seaward of Mean Higher High Water (MHHW). The Olympic National Park abuts much of the MHHW boundary and also includes many of the offshore islands. The islands themselves are also a National Wildlife Refuge, warranting additional management attention by the U.S. Fish and Wildlife Service. Finally, the offshore zone has been proposed as a National Marine Sanctuary, which designation would place its management under the National Oceanographic and Atmospheric Administration.

Also important to proposed OCS oil and gas activities are U.S. government treaties with coastal Tribes. These assure continued access to fishing in "usual and accustomed" fishing grounds. For some of the tribes these grounds have historically extended well out into the offshore zone (see Johnson 1986).

Finally, significant U.S. Department of Defense activities offshore Washington State will likely influence leasing and related activities in certain areas.

INFORMATION IN OCS DECISION MAKING

The Rational Model and Its Limitations

This chapter has focused on the national and state context for OCS leasing and development, stressing the decision-making structure that has evolved. It is important, also, to consider the operational behavior of this system. How does the structure actually work in making important decisions? One can envision a rational model, by which decisions are made according to agreed criteria and decision rules. As will be shown in the OCS context, there are substantial limitations to this approach.

The U.S. Congress, in directing the Secretary of Interior to conduct leasing for OCS oil and gas, called for a program that encourages development of OCS petroleum resources, protects environmental and biological values, accommodates diverse users of the ocean, and ensures a fair market return to the people of the United States.

In some areas of planning and resource management, policies such as those laid out for OCS energy development can lead fairly directly to a rational planning process, whereby:

- o Policies are translated into management objectives.
- o Studies are conducted to describe system components.
- o Variables to be maximized or minimized are identified.
- o Models are developed to explain the relationships among variables.
- o Further studies are conducted to test the model.
- o Results are interpreted and specific planning strategies, design standards, guidelines, and regulations are developed.

For decision making under the OCSLA, the rational process would be designed to maximize development benefits and revenues, minimize environmental and socioeconomic impacts, and seek some optimum mixture where these variables interact. Further, the rational model suggests that a fairly linear process of identifying information needs, conducting studies, and arriving at solutions may be achieved.

In practice, however, there are a variety of limitations on the rational model for OCS decision making:

- o The location and magnitude of petroleum resources is highly uncertain. Resolution of uncertainty can be accomplished only through heavy investment of time and money in exploratory drilling.
- o The nature of risks associated with OCS activities also present great uncertainty. Finite but very low probabilities are associated with catastrophic events such as major oil spills. Relatively higher probabilities are associated with chronic biological impacts from drilling discharge, but their magnitude is expected to be low and is known to be very difficult to measure.
- o Each participant in the decision arena operates under very different goals and answers to a very different constituency. Thus, even basic assumptions about risks, values, and information needs will differ dramatically.
- o OCS decision making occurs in a highly political arena, because of the closely held values, existing uses, mistrust, and state/federal revenue and power issues involved. This means that OCS decisions are subject to extensive outside influence and to frequent legal challenge. Also, this means that the mix of policies and values brought to the decision arena will change over time with shifts in administrations at the national and state levels.

Environmental Studies

Given significant limitations to the rational model, it is important to review the role of scientifically derived information in OCS decision making. Skeptics might conclude that the decision-making system is so complex and politicized that no amount of systematic information can aid in reaching consensus. This study assumes that scientifically derived information is essential to responsible decision making but that a critical evaluation of its role in actual practice is needed.

Since 1973, environmental studies have been conducted in an organized program in support of the federal OCS program. The DOI Environmental Studies Program, now a division of MMS, has spent about \$450 million in the intervening years. The early approach of this program involved extensive "baseline" or "benchmark" studies, under the assumptions that a comprehensive understanding of ocean systems would allow impacts to be predicted and that the "baselines" would serve as

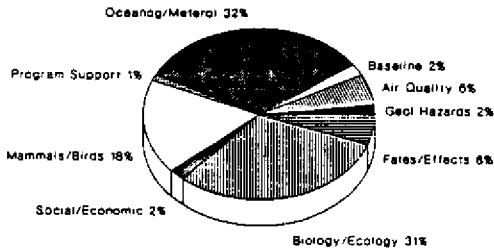
Figure 1.4 Environmental Studies Program Objectives and Pacific Region Funding.

MMS Environmental Studies Program Objectives

As prescribed by the 1978 OCS Lands Act Amendments, the purpose of the OCS Environmental Studies program is to:

- a) enhance the leasing decision process by providing information on the status of the environment upon which the prediction of the impacts of Outer Continental Shelf oil and gas development may be based;
- b) provide information on the ways and extent that Outer Continental Shelf development can potentially impact the human, marine, biological, and coastal areas;
- c) ensure that information already available or being collected under the program is in a form that can be used in the decision making process associated with a specific leasing action or with the longer term Outer Continental Shelf minerals management responsibilities; and
- d) provide a basis for future monitoring of Outer Continental Shelf operations.

Pacific OCS Environmental Studies Funding Through FY 1987 - \$67,000,000



Source: Minerals Management Service, 1988.

controls against which future impacts could be measured. In addition to the baseline studies, the program contributed significantly to an understanding of petroleum toxicity, biological resources, and oceanographic processes.

Evaluation of the Environmental Studies program in the mid-1970s called these assumptions into question (GAO 1978; NRC 1978). First, the studies had often been conducted without clear reference to testable hypotheses. Thus, for example, monitoring for sublethal effects was conducted in some areas without establishing acceptable "control" sites against which to compare the results of observation. Second, the level of resolution gained in broad OCS studies did not relate directly to the most important questions about oil and gas impacts. Broad surveys of species composition in a region, for example, did little to address specific concerns over commercially valuable species or sensitive life stages.

The 1978 study design document known as the "blue book" (BLM 1978) sought to correct these deficiencies, and the focus of studies shifted away from the benchmark approach. Figure 1.4 shows the program objectives and a breakdown of emphasis among disciplines for the Pacific OCS Region. Currently, MMS is reviewing and updating the study design manual and its long-range studies plan. Also, a second independent evaluation of the program is under way by the National Research Council. Results of the NRC evaluation for physical oceanography are due in late 1988, and panel reports on ecology and socioeconomics are scheduled for 1989.

Several cases in this report show some of the relationships between studies and decision making. See, especially, the Florida and Alaska cases in Chapter 3. More often than not, study results answer only part of the question, reflecting the inherent uncertainty and complexity of the ocean environment and OCS activities. This leaves the door open for value judgments, political influence, and legal challenge. Another frequent response is for those who disagree simply to request more studies.

MMS is beginning to respond to these pitfalls. A more careful process of information transfer, evaluation, and negotiation is used for prioritizing studies at the regional level. This is done through the Regional Technical Working Groups and other specialists on technical review committees. State representatives and independent scientists participate in these groups. Criteria used in prioritizing studies are shown in Table 1.3 and show how studies are intended to relate directly to decision making.

Table 1.3 Criteria for Evaluating Proposed Studies Within the Minerals Management Service Environmental Studies Program.

Criterion A: Mandate for conducting study

Study information is essential for a specific leasing, lease management, or program management decision because study is:

- Ordered by a court to support a sale or program-specific decision or
- Explicitly required by existing federal or state statute or by agency directive

Study would provide critical information for a specific leasing or lease management decision involving environmental risk or impact or for a specific program management decision; or a similar study is required by previous agreement for settlement of litigation in a similar OCS region.

Study would provide useful information for a specific leasing or lease management decision involving environmental risk or impacts or for a specific program management decision.

Study information would not affect a specific leasing or lease management decision involving environmental risk or impact or a specific program management decision. However, it could contribute to improved leasing, lease management, or program management decisions through enhancement and/or refinement of the quality of the database.

Criterion B: Timing and content for information

Study must be initiated in the budget period at issue:

- In order to be completed in time for use in a specific leasing, lease management, or program management decision;
- Because study is a necessary prerequisite for another study to support a leasing, lease management, or program management decision; or
- Because study is a continuation or logical subsequent to an ongoing study to support a leasing, lease management, or program management decision.

Study can be deferred until the next budget period. However, such deferral creates significant risk that study cannot be completed in time for use in immediate leasing, lease management, or program management decision.

Study can be deferred until the next budget period and still be completed in time for use in forthcoming leasing, lease management, or program management decisions.

Source: Minerals Management Service, 1988.

A remaining concern about environmental studies is the way in which the information generated is interpreted and used to influence decision making. Congress identified fundamental policies and called for studies to support decisions. Because of the general nature of this mandate, however, and because of the tremendous uncertainty involved, there are no clear rules for using environmental information. Ultimately, the Secretary of Interior exercises enormous discretion, and his decisions are routinely the subject of technical, legal, and political challenge. Thus, environmental studies are not a panacea through which OCS conflict will be resolved. They are essential to informed dialogue and form the basis for negotiation and exchange.

State and Local Interests in OCS Information

States and local governments are important participants in dialogue, negotiation, and exchange with MMS. They seek to protect ocean resources and existing uses and to take maximum advantage of development which does occur. States and local governments have diverse points of access to the decision process, and they have diverse needs for information to guide their participation.

Often the information needs of states and local governments are much different from those stressed by MMS. Thus, it is essential that states and local governments go into the decision arena with a good understanding of how information can be used to influence decisions. There is no magic formula, however, by which to gain such understanding. Table 1.4, for example, shows significant variation in study priorities among different user groups on MMS advisory committees. The rankings of non-MMS participants at the federal and state levels were substantially different from those of local government.

Moreover, each OCS region is at a different stage of leasing and development. Each has particular oceanographic and biological resources and existing uses. And each state has its own policies and attitudes about how values should be balanced on the OCS. Thus, there may be very different decision alternatives on the table and very different information needs in each region.

The body of this study involves several different perspectives on the decision process for oil and gas and the critical roles played by the regulatory structure, technical information, state and local policy, external

Table 1.4 Environmental Studies Priorities. Results of a survey conducted by the U.S. General Accounting Office. The Committees are part of the MMS OCS Advisory Board. Policy committee has representatives from Cabinet level departments, coastal states and public and private appointees. Scientific committee includes 10-15 appointments from the scientific community.

Ranking of emphasis	Policy Committee ^a	Scientific Committee	Local government
1	Offshore habitats	Coastal habitats	Environmental geology
2	Water quality	Physical oceanography	Endangered and threatened species
3	Commercial fisheries	Commercial fisheries	Chemical oceanography ^b
4	Environmental geology	Socioeconomic conditions	Physical oceanography ^b
5	Coastal habitats	Meteorological conditions	Air quality
6	Physical oceanography	Offshore habitats	Socioeconomic conditions
7	Endangered and threatened species	Chemical oceanography	Water quality
8	Chemical oceanography	Environmental geology	Coastal habitats
9	Socioeconomic conditions	Water quality	Wildlife species
10	Wildlife species	Air quality	Commercial fisheries
11	Air quality	Wildlife species	Offshore habitats
12	Meteorological conditions	Endangered and threatened species	Meteorological conditions

^aThe rankings of coastal states, regional technical working groups, federal government, state government, oil and gas and related companies, and university and private/research consultants were highly similar to those of the Policy Committee

^bFor local government respondents, there was no difference in rankings for chemical oceanography and physical oceanography.

Source: General Accounting Office, 1988.

legal and political influence, and organizational arrangements in shaping the decision arena. Each perspective, drawn from the experience of states and local governments around the country, leads to useful conclusions about preparing to participate in the OCS oil and gas leasing and development process.

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2

Prelease to Exploration: Management Tools

In this chapter, previous uses of information in OCS decision making are examined to learn from the experience of states that have faced federal offshore oil and gas leasing. First, three types of decisions in which states participate are identified. Second, the information required and most useful in these decision processes is ascertained from the public records of decisions made. Third, observations are made on the type and timing of information needs.

In particular, this chapter describes the information that promotes state interests in the offshore oil and gas decision process during the prelease, lease sale, and exploratory phases. The interests of state and local governments are frequently different from the interests of the federal government and the oil and gas industry. A strong state and local stance based on well-defined interests asserted early in the decision process and backed up with the right kinds of information sets crucial directions for later decisions.

There are myriad decisions to be made throughout the offshore oil and gas development process. To select those decisions that might yield the best clues about the information states need, the following criteria were adopted:

- o The decision process must be one in which state and local governments have a formal role.
- o There must be a public record of the process of coming to a decision and of the decision itself.

- o The decision must be associated with a major offshore development action such as leasing or exploratory drilling.

These criteria focus attention on the major issues and insist on a reasonably clear decision record. On this basis, the list of decision processes addressed in this chapter have been narrowed to:

- o The area identification process that results in decisions to offer areas for lease and to defer blocks from leasing consideration.
- o Decisions about lease sale stipulations that will regulate activities on the leases.
- o Decisions on permits for various activities associated with exploration of leased tracts.

AREA IDENTIFICATION

The recent (post-1982) pattern for MMS lease-sale planning is to identify a fairly large "area of hydrocarbon potential," and propose this area within the 5-year Leasing Program. "Subarea deferrals" are areas excluded from consideration at the 5-Year Program stage, and they remain excluded throughout the life of the Program. Also identified in the 5-Year Program are "highlighted areas," which have been requested for deferral and will be analyzed further in planning for individual lease sales.

As planning begins for a particular sale, "Area Identification" is an early formal step. Information from the 5-Year Program, from the Call for Information and from lease-sale EIS scoping is assembled. The boundaries of the proposed lease offering are refined. The result is a "proposed federal action" which is the basis for the lease sale EIS and "deferral alternatives" which are analyzed within the EIS.

The Secretary of Interior then may defer areas from a lease sale as the outcome of the EIS. Additional deferrals can be made in response to Governors' comments on the Proposed Notice of Sale. In all, there are several decision points in the sale planning sequence, each of which refines the area offered for lease. In the remainder of this report, *area identification* refers to this overall process rather than to the single Area Identification step.

In general, area identification rarely follows the "rational model" described in Chapter 1. It is a complex process which runs throughout the prelease phase and involves negotiation and legal/political maneuvering among the Department of the Interior officials, Congress, and state political leaders.

Area identification is one way that MMS attempts to balance national energy needs with environmental and socioeconomic concerns. The information driving this decision process includes the agency's geologic data, interest identified by the petroleum industry, and information on affected resources and ocean uses usually provided by states, local governments, citizen's groups, and other federal resource agencies. The Secretary has ultimate authority in area identification, but state and local governments have a variety of means by which to influence these decisions.

Subarea deferrals in the current 5-Year Program are shown in Table 2.1. Some of these result directly from comments on the current Program, while others result from past negotiations on prior lease sales. Deferral areas are designated most often to protect biologically significant areas. Usually these biologically significant areas are formally designated in advance of the proposed federal leasing activity. Examples of such designations are National Marine Sanctuaries, National Wildlife Refuges, and state Areas of Biological Significance (California State Water Resource Control Board 1986). Some historical sites, such as the wreck of the *USS Monitor*, have been designated as Marine Sanctuaries and have qualified for deferral protection. This occurred in mid-Atlantic Lease Sale 76.

Formal designation of biologically significant areas is not a prerequisite for obtaining a deferral, but it does inform MMS of the importance placed on the area by other decision makers. If formal designation has not been made, the case for protecting a biologically significant area must be asserted during the area identification process. Once accepted, MMS deferrals incorporate the existing designated areas and often include a buffer zone of 3-6 miles in width.

The second most often deferred areas are those where military or national security/training activities occur. Deferrals for national defense operations require information on patterns of use by the military, information which is not publicly available. The location of these areas is generally well marked on navigation and aeronautical charts, but the timing, extent of use and nature of activities is not. The Department of Defense is concerned about safety of users and the need to limit liability for damages. Though

Table 2.1 Deferral Areas In the 5-Year Program, April, 1987.

<u>Planning Area</u>	<u>Deferral/Highlighted Area</u>	<u>Reason</u>
North Atlantic	1. Area North of 42 degrees N. Lat.	Low oil potential
	2. 15-50 mile nearshore buffer	Low oil potential
Mid Atlantic	1. 15(or more) mile nearshore buffer	Low oil potential
	2. NASA operating area	Interference w/ operations
	*3. 19 blocks w/in deferred area	Industry Interest
	4. U.S.S. Monitor Marine Sanctuary	Recognized historic value
South Atlantic	1. Gray's Reef Marine Sanctuary	Biological significance
	2. NASA flight clearance zone	Space flight conflicts
	*3. 121 blocks w/in deferred area	Industry interest
	4. Straits of Florida/Key Largo and Looe Key Marine Sanctuary	Biological significance
Eastern Gulf of Mexico	1. Seagrass beds/ Florida Middle Ground	Biological significance
	2. 30 mile nearshore buffer: 26 degrees N. Lat. to Cape San Blas	Biological significance
Western Gulf	1. Flower Garden Banks 60 M contour	Biological significance
California (general)	1. Buffer zones- 60% of mainland coast	Biological significance
	2. Seaward of 900meter isobath	Biological significance
	3. 6 mile buffer zone for San Clemente Is./Santa Catalina	Biological significance
N. California	4. Buffer off Redwood National Park	Biological significance
	5. Trinidad Head ASBS, Kings Range National Conservation Area	Biological significance
	6. Pygmy Forest Ecological Staircase	Biological significance
Central California	7. Buffer Kelp Beds at Sunder Reef ASBS, Gerstle Cove, Del Mar ASBS	Biological significance
	8. Point Reyes, Point Reyes-Farallon Is. NMS, offshore San Francisco Bay, and immediate area off Cordell Bank	Biological significance
	9. Coastal buffer offshore James V. Fitzgerald Marine Reserve	Biological significance
	10. Buffer offshore Ano Nuevo Island ASBS, and north end Sea Otter Range	Biological significance
	11. Offshore Monterey Bay and Big Sur	Biological significance
	12. Buffer south of Big Sur, southern Sea Otter Range, Salton Creek ASBS	Biological significance
Southern California	13. Santa Barbara Federal Preserve	Biological significance
	14. Channel Islands Marine Sanctuary	Biological significance
	15. Santa Monica (Pt. Dume to Pt. Fermin)	Biological significance
	16. Newport Beach (Irvine Marine Refuge)	Biological significance
	17. Meisler Park ASBS	Biological significance
	18. San Diego Maine Refuge/San Diego -La Jolla Ecological Reserve ASBS	Biological significance
	19. San Diego Offshore and San Nicholas Basin Navy Operating area	Biological significance

* Denotes "Highlighted areas" identified by MMS in the 5-Year Program for special pre-sale consideration. Includes potential deferral areas requested by states or other interested parties and areas within proposed deferrals for which industry interest has been shown.

Oregon/ Washington	1. Seaward of 900 meter isobath	Biological significance
	*2. Heceta, Stonewall, Perpetua, and Coquille Banks	Biological significance
	*3. Oregon Island Refuge and 6 mile buffer	Biological significance
	*4. Columbia River, Yaquina Bay and 6 mile buffer	Biological significance
	*5. Cascade Head and Salmon River Estuary Scenic Research Area and 6 mile buffer	Biological significance
	*6. North of 47 degrees N. Lat.	Biological significance
	*7. 12 miles off Grays Harbor, Willapa Bay and Washington Coast north of the Columbia River	Biological significance
Alaska/ St. George Basin	1. North of Aleutian Islands	Biological significance
	2. Buffer around Pribilof Islands	Biological significance
	3. NE part of planning area	Biological significance
	*4. Extensions of Pribilofs, Aleutians and NE deferrals	Biological significance
Navarin Basin	1. Deepwater areas in SW part	Low resource potential
	*2. Portions of Shelf break	Biological significance
	*3. NE corner of area	Biological significance
Norton Basin	1. Buffer zone around St. Lawrence Is.	Biological significance
	2. Eastern Coastal Part of Norton Sound and 12 miles off Yukon Delta	Biological significance
	3. Northern Portion West of Wales	Biological significance
	*4. Shelf Between St. Lawrence Is. and Coast of Mainland	Biological significance
	*5. Additional Areas Offshore Yukon Delta and Central Norton Sound	Biological significance
Beaufort Sea	*1. 59 blocks offshore of Barrow	Biological significance

Source: Minerals Management Service, 1987a.

not stated explicitly, the Department of Defense desires secrecy and freedom of operations.

The mere existence of a military reserve area does not automatically preclude oil and gas leasing activity. Some areas that previously have been off limits to leasing are being opened through negotiations between MMS and the Department of Defense. San Nicolas Basin, California, is one example (MMS 1987a). These are areas where there is high resource potential and where it is possible to schedule activities to avoid conflict in space and time.

Other deferrals are made using distance from shore or depth as criteria, usually to protect a biologically significant habitat or scenic area, or for reasons related to technological and economic feasibility. The distance offshore for many of the buffer zones is six miles, but this distance has no clearly stated scientific justification. The rationale for 14-

mile buffer zones in Atlantic regions includes limited oil resource potential of the nearshore area, aesthetic concerns, and oil spill risks.

On the other hand, bathymetric criteria for deferral areas may have a greater scientific basis. For example, the use of the 400-meter isobath in the North Atlantic region effectively protects the highly productive Georges Bank shoreward of the shelf break and includes the upper portions of several marine canyons. The 900-meter isobath used in parts of the Pacific OCS region is based on low oil resource values beyond the continental shelf and on technical feasibility in deeper water (MMS 1987a). The Flower Gardens and other banks in the western and central Gulf of Mexico, which are sensitive reef habitats, are known to occur at specific depths and are deferred from leasing on that basis.

STIPULATIONS

Stipulations are measures imposed on lessees to control the location of activities, to guide operations, or to generate site-specific information for management decisions. Analysis of effects of OCS leasing during the EIS process leads to proposals for mitigating measures. Stipulations document the proposed mitigating measures and are announced through the Notice of Sale process. Once a sale is held, stipulations then become a legally binding contractual provision of a lease. Stipulations may be applied to an entire lease sale area. Frequently, a Notice of Sale lists tracts for which certain stipulations apply. Single tracts are sometimes subject to individual restrictions, but this is extremely unusual.

Stipulations may affect the amount of money a bidder is willing to offer for a tract. If the bid is accepted, the lessee is obligated to carry out the stipulations prior to or during any proposed exploration and development of the site. This introduces both added costs and uncertainty about future development of the tracts.

Stipulations cover a wide range of environmental, commercial, and operational concerns. For example, stipulations indicate a strong coastal state or county preference for transporting oil and gas to shore by pipeline and for onshore, rather than offshore, processing. Others may require site-specific surveys to assess biological, cultural, or other resources. If such resources are discovered, the lessee is obligated to take steps to protect

Table 2.2 OCS Lease Sales Analyzed for Stipulations.

Sale No.	Sale Name/Date	Reference
P2	Washington Oregon Offshore 10/01/64	29 FR 2562, 29 FR 3819
P4	Southern California 02/06/68	32 FR 20884
35	Southern California Bight 12/11/75	40 FR 51672, 40 FR 52070, 40 FR 52421
42	North Atlantic 12/18/79	42 FR 251, 44 FR 191, 44 FR 195, 44 FR 223
53	Central and Northern CA 05/28/81	46 FR 23673
57	Norton Basin, AK 03/15/83	48 FR 5315, 48 FR 6180
70	St. George Basin, AK 04/12/83	48 FR 10262
71	Diapir Field, AK 10/13/82	47 FR 40362
76	Mid-Atlantic 04/26/83	48 FR 12660, 48 FR 14057
80	Southern California 10/17/84	49 FR 36475
82	North Atlantic Cancelled 09/28/85 01/04/85	49 FR 33976
87	Diapir Field, AK 08/22/84	49 FR 29726, 49 FR 30601
88	Gulf of Alaska/Cook Inlet Cancelled 05/02/86	49 FR 31638
92	North Aleutian Basin Enjoined 01/13/86	50 FR 51372
94	Eastern Gulf of Mexico 12/18/85	50 FR 47510
97	Beaufort Sea 02/10/88	MMS 1988a
104	Central Gulf of Mexico 04/30/85	51 FR 10726
105	Western Gulf of Mexico 07/18/86	51 FR 26644
112	Western Gulf of Mexico	MMS 1987
--	Standard Stipulations Draft 3/16/88	MMS 1988b

FR = Federal Register

MMS 1987, Outer Continental Shelf Proposed notice of Sale Western Gulf of Mexico Oil and Gas Lease Sale 112, Washington, D.C., March 10, 1987.

MMS 1988a, Proposed Notice of Sale Beaufort Sea Oil and Gas Lease Sale 97, Anchorage, February 10, 1988.

MMS 1988b, Review of Standard Mitigating Measures Memorandum from Bruce G. Weetman, Regional Director, Atlantic OCS Region, to Associate Director for Offshore Minerals Management, March 16, 1988.

Source: Weise, 1986, Risotto and Collins, 1986, Sliitor and Weise, 1987, and Minerals Management Service, 1987b.

Table 2.3 Categorization of Issues in Stipulations.

Category	
1.	Protection of Archaeological/Cultural Resources
2.	Protection of Biological Resources
3.	Fisheries/Wildlife Training Program/Orientation
4.	Wellhead/Pipeline Design to Avoid Conflict with Fishing
5.	Operational Controls, Electromagnetic Emissions, and Evacuation (Military 1)
6.	Hold Harmless (Military 2)
7.	Geohazards Identification
8.	Transportation of Hydrocarbon Products by Pipeline
9.	Disposal of Drilling Discharges (Muds, Cuttings, Production Waters)
10.	Testing/Provision of Oil Spill Contingency/Containment Equipment
11.	Avoiding Hazardous Material (Explosives, Toxics, Radioactive Matter)
12.	Protection of Important Biological Resources
13.	Protection of Commercial Fisheries
14.	Protection of Air Quality
15.	Requiring Onshore Oil Processing
16.	Protecting Visual Quality/Requiring Camouflage Paint
17.	Unitization Agreement Requirements
18.	Adjustment of Royalty Rates
19.	Other

Source: Modified from Minerals Management Service, 1987b.

them. In some cases the obligation is automatic, and in others it is at the discretion of a designated MMS official. The submarine canyons stipulation for the Georges Bank, discussed in Chapter 3, is a good illustration of a resource protection stipulation.

MMS ability to require special measures through lease stipulations is an opportunity for states and local governments to influence the leasing and development process. However, some MMS officials do not favor use of stipulations. According to the Chief of the MMS Offshore Rules and Operations Division, his "office still prefers that leases be issued free of special stipulations" (McDonald 1988). This is because of his belief that some stipulations repeat requirements found in other MMS regulations and therefore increase administrative time and costs. Although some stipulations have become fairly routine, states and local governments often bear the burden of proof that a stipulation is necessary. They must be prepared, therefore, to make a case for the stipulations, including, at times, providing draft language.

Stipulations from nineteen selected lease sales plus MMS's draft standard stipulation package, were analyzed (Table 2.2). These stipulations are from lease sales that range in time from 1964 to 1988 and geographically from south Florida to the Beaufort Sea. They include nearly all of the lease sale examples used in this report and additional recent lease sales. They represent about 20% of all lease sales ever offered. The stipulations cover many important categories of concern, as shown in Table 2.3.

Table 2.4 relates lease sales (and MMS's draft standard stipulation package) to the categories of concern, and provides the number assigned to the particular stipulation in the lease sale that addresses the category. Appendix B provides the text of at least one stipulation for each category of concern.

Table 2.4 yields considerable information on experience using stipulations. These can be summarized as follows:

- o Relatively few sales contain more than 10 stipulations. The average number of stipulations is between 7 and 8. Southern California Sale 80, with 17 stipulations, is considered by many to be a model of expert use of stipulations to ensure protection of a wide range of state and local interests. (Sale 73 and 80 stipulations

Table 2.4 Stipulations in Selected OCS Lease Sales By Category.

	LEASE SALE NUMBER																			TOTAL		
	P2	P4	35	42	53	57	70	71	76	80	82	87	88	92	94	97	104	105	112		MMS	
Archaeological	1	1				1	2	1	2	1	1	1	1	1	1	1	1	1	1	1	1	18
Biological	3	2	1			4	8	2	1	2	3	3	3	3	2	3	2,3	2	2			2,3, 4,5, 17
Training			6	8	2	2	3				5	2	2	2		2						8,9, 12
Wells/Pipes			3	7		3							4	4								11, 7
Military 1	1	1	5	8			5	3	6,7						3,5,7	4	3	3	3			12-17, 13
Military 2	2	4	4	5			6	6			6				3	4	3	3	3			18, 11
Geohazard																						
Transportation			3	6		6	4	3			3	5	5	5	4	5						10, 13
Discharge			4			8	7	4			4,8	7								2		7,8, 10
Oil Spill			2,7, 8,9			4	6	6	10		6					6						7, 8
Hazard. Mater.																						
Impt. Biology	6		1	5,7		5	5			8	8	4		8		6,7						19, 10
Fisheries										12,16												2
Air Quality																						1
Onshore Proc.																						1
Visual			10							8												3, 3
Utilization																						1
Royalty Rate	2			3,9	3	5	1	9														6
Other											9	8,9	6	6	6	5						9
Number of Stipulations	2	2	10	8	10	8	5	10	10	17	9	9	6	8	7	5	3	3	3	3	3	19

Average number of stipulations per lease sale: 7.85
 All numbers in table refer to stipulation numbers in particular lease sales.

Representative stipulation reproduced in Appendix B.

Source: Weise, 1986, Risotto and Collins, 1986, Sitor and Weise, 1987, and Minerals Management Service, 1987b.

resulted from Congressionally sanctioned negotiations between California and MMS.)

- o Relatively few categories of lease stipulations are found in most sales. The chief categories of stipulations include archaeological and cultural resources, biological resources, fisheries training programs for oil workers, military operations, and limitation of liability from military activities. These have been used frequently enough that they are predictably part of future leases where appropriate.
- o There are no discernible trends in the number of stipulations through time from this set of lease sales. In addition, there is no obvious pattern in the "popularity" of any category of stipulation, although a number have been used infrequently.
- o Recent lease sales in the central and western Gulf of Mexico have relatively few stipulations while the California sales (particularly Sale 80) have considerably more. The Atlantic regions and the Alaska region occupy intermediate positions in terms of number of lease stipulations per sale.
- o The texts of the stipulations for each category vary only slightly when dealing with general contractual responsibilities. They differ in the nature of the OCS area to which they are applied with respect to geographic referents, type of resources, and other factors. Sometimes, subtle differences in wording have been viewed as very significant by states.
- o There does not appear to be consistent use of stipulations. For example, virtually all oil produced in OCS areas is brought to shore by pipeline but only half of the lease sales examined contained stipulations requiring this method of oil transport.

While many of the lease sale stipulations mandate action by the lessee, a number of them are applied at the discretion of MMS regional managers. Virtually no summary information is available on the implementation of the stipulations -- either for the mandatory actions or for MMS's use of its discretionary authority. Future research is needed on implementation of stipulations, including adequacy and compliance by lessees.

Each category of stipulation is discussed below. Special attention is given to the information that is generated about the category and the proposed stipulations. A proposal for a stipulation requires that information on resources at risk and appropriate protection measures be gathered and analyzed. From this review, it is possible to determine the ways in which information has played a role in MMS decisions to issue stipulations.

Protection of Archaeological/Cultural Resources

Shipwrecks are the most obvious archaeological and cultural resource on the continental shelf. However, archaeologists believe that humans lived on areas now covered by the sea during the most recent ice age when sea levels were as much as 120 meters lower (MMS n.d.). Such habitation sites are likely to be located where the ocean has covered a river or a lake.

This stipulation allows a MMS regional manager or other designated official to require an archeological survey if he or she believes such resources could exist. In some cases, surveys by professional marine archaeologists are specified. Usually archaeologists are aided by geophysicists since these surveys require sophisticated acoustical equipment and interpretation. In the event archaeological sites are found, the lessee must ensure that operations do not disturb them and must file a mitigation plan for approval by MMS regional managers. If cultural or archaeological resources are found during construction or operation of offshore facilities, they must be reported and protected until regional managers decide what mitigating measures are appropriate.

Protection of Biological Resources

Stipulations can apply widely to all species of fish, marine mammals, plants, birds, and unique or rare assemblages of sea life. The broadest definition is found in the MMS Standard Stipulation package, which includes:

- (1) very unusual, rare or uncommon ecosystems;
- (2) species of limited regional distribution that may be adversely affected by any lease operation;
- (3) critical habitat for endangered and/or threatened species; and
- (4) productive ecosystems and/or habitats of all species of aquatic animals important as commercial or recreational fisheries. (MMS 1988a)

In current practice, only the first three of these categories are mentioned explicitly, but the last is implied. Sometimes separate sets of stipulations are listed for biological resources, marine mammals, and commercial fisheries (see below). There is no uniform approach to the handling of biological resources. The mitigating measures generally impose area or season restrictions on OCS activities. (See Alaska case study in Chapter 3.)

Where regional managers know or suspect that valuable biological resources may be present, the lessees can be required to perform site-specific surveys to document their presence or absence. If present, mitigation measures must be proposed and approved. Furthermore, if such resources are discovered in the course of operations, lessees must report them to the regional manager, who will determine what mitigation measures are required. Frequently, lessees will perform biological surveys at the same time as geophysical and archaeological/cultural surveys.

States need information about the distribution and habitats of marine populations in their coastal waters to support requests to MMS for biological stipulations. If rare or uncommon habitats exist or if endangered species and marine mammals are present, the state need only document this in general terms to encourage MMS to require more complete data acquisition by lessees. Similarly, a demonstration that there is insufficient knowledge to make decisions about a biological resource may be important in requesting a stipulation. Unique areas and highly sensitive populations such as coral reefs qualify most easily for protection with a stipulation. Hard bottom substrates and "live bottoms" that are important for fishing or recreational diving may receive special consideration if a case is made for the existence of such areas and the need for protection. Florida has developed procedures for protecting "live bottom" resources, as reported in Chapter 3. Special relationships between biological resources and some physical oceanographic features may also merit special attention, as seen in the submarine canyons near Georges Bank, reported in Chapter 3.

As discussed in the previous section, highly productive fisheries in a proposed lease sale area have not convinced MMS to defer large areas from lease. MMS is reluctant to impose stipulations on leases that protect fisheries even though they may occupy part of a major fishing ground.

Fisheries/Wildlife Training Program/Orientation

To ease conflicts with fishermen and lessen environmental concerns, lessees may be required to educate their boat, aircraft, and drilling crews on fishing and wildlife behavior around offshore operations. Training programs dealing with protection of marine mammals, seabirds, and endangered species may be required.

Stipulations that require training programs are particularly justified where employees are new to an area and fish and wildlife patterns differ significantly from their previous job location.

Wellhead/Pipeline Design to Avoid Conflict with Fishing

Where fishing occurs in areas of oil and gas leasing, it is common to require that wellheads or other structures be designed not to snag fishing nets. Pipelines that are not buried must be constructed so that trawling gear can pass unharmed. Where placement of obstructions cannot be avoided, oil companies must notify the U.S. Coast Guard of the location of the structure so that fishermen can be advised. These stipulations protect the interest of the fishermen and the oil and gas operator.

Operational Controls, Electromagnetic Emissions and Evacuation, Hold Harmless (Military)

The most specific and complex lease sale stipulations are those protecting military surface and air operating zones in or near oil and gas leases. These stipulations are imposed to prevent conflict with military activities, for control of interference with electromagnetic emissions, to provide for evacuation of oil company personnel if necessary for national security or safety, and to assert that the U.S. is not liable for impacts of military activity on oil and gas development.

States do not play a significant role in negotiation of these stipulations because they are made by MMS and the Department of Defense. But states usually endorse these stipulations in formal comments to MMS. For example, California advocated the inclusion of stipulations related to military activities offshore of proposed Lease Sale 35. If large areas with military significance exist and the Department of Defense is intent on precluding oil and gas leasing, then state attention can be directed elsewhere since those areas likely will be deferred from leasing.

Geohazards Identification

Stipulations concerning geohazards are imposed less frequently than other stipulations. A stipulation for Sale 42 precluded drilling operations and placement of wellheads and pipelines until lessees satisfied the regional manager that hazards were slight or that structures could be designed to protect the environment in the event of slumping of sediments. Further, lessees were required to have down-hole control devices that would automatically cut off the flow of oil in the event of slumping. More recently, however, MMS identifies suspected hazards in the Information to Lessees instead of using stipulations.

Knowledge of the sedimentation history and geohazard processes in offshore waters is essential to cases for geohazard stipulations. For the most part, offshore geohazards have been studied and mapped by the U.S. Geological Survey and these are a matter of public record. The large scale nature of most of these studies diminishes their utility for tract specific planning. Therefore, the need for detailed survey at the exploration stage is increased.

Transportation of Hydrocarbon Products by Pipeline

A number of leases contain stipulations that require the transport of any oil and gas to shore by pipeline instead of processing it at sea and transporting it by tanker. In some cases there are requirements to cooperate with pipeline siting task forces or with other local plans for oil transportation (Sale 92). In addition, there are stipulations for burial of pipelines and for other measures to protect pipelines from damage and to prevent multiple use conflicts. Stipulations also cover pipeline design and placement in areas where there are unusual oceanographic conditions such as ice hazards (Sale 97).

Where pipelines are not feasible or acceptable, stipulations may require vessels used in oil transport to meet standards established by the most recent U.S. legislation (Port and Tanker Safety Act of 1979 - PL 95-474). In emergencies, or while a pipeline is under construction, stipulations may permit use of vessels to transport oil.

Oil transport stipulations may seem premature at the lease stage before producible quantities of oil or gas are discovered. However, this is the last stage at which general, areawide policies for development can be applied. Thus, states and local governments, California in particular for

Sale 80, have insisted on such stipulations to establish clearly that pipelines, not tankers, will be used to transport oil. Stipulations may require joint use of pipeline facilities in anticipation of policies for commingling when in state and local jurisdictions.

Knowledge of continental shelf topography, texture, and hazards are prerequisites for federal/state/industry negotiations on transport stipulations. During post-lease planning, early investigation and planning for appropriate sites for bringing oil and gas pipelines onto shore is necessary. It may be desirable, also, to anticipate locations of onshore pipelines, terminals, refineries, and storage facilities.

Disposal of Drilling Discharges (Cuttings, Muds, and Produced Waters)

One of the most heated controversies between the MMS, industry, and states concerns the content, disposal, and effects of drilling muds, cuttings, and produced waters. The EPA has formal permitting authority over these discharges to which MMS defers. However, use of stipulations to further control discharges is sometimes desirable. (See below for more discussion of the role of EPA.) Some stipulations require the use of nontoxic drilling muds, particularly where there are significant biological resources in the discharge area. High velocity currents disperse drilling muds widely, and unless unique biological resources are at risk, special discharge requirements are not stipulated. In areas with less dispersion or higher resource risk, discharge/shunting of muds to subsurface waters may be required. Stipulations may prohibit the discharge of drilling muds in extremely shallow water (5-10 m.) even when drilling activity occurs far offshore (Sale 97).

The most restrictive stipulations are applied where there is a high risk of smothering or imposing toxics on delicate ecological communities. In these waters, muds and cuttings must be barged to shore or to an adjacent site for disposal. Discharge of the water that is produced when oil and gas are brought up from underground can be a problem when it is heavily contaminated with oil residues. Stipulations requiring that produced waters be treated or reinjected may be necessary and desirable, although this is usually not an issue until the production phase.

States pursuing these stipulations must have an understanding of the drilling muds and cuttings as well as ocean circulation patterns and distribution of species vulnerable to smothering or other effects of drilling muds. Because this information is site and season specific, only general

evaluations of risks can be made. However, the need for detailed analysis increases in shallower areas. Stipulations that control the drilling discharges can be negotiated at the lease sale stage and invoked at later stages.

Testing/Provision of Oil Spill Contingency/Containment Equipment

Oil spill contingency stipulations require that measures be taken to assure timely availability of containment and cleanup services in the event of an oil spill. In remote areas and in biologically sensitive areas, stipulations often require that oil spill containment and clean-up equipment and trained personnel are positioned at a well site or nearby (Sale 57).

In the event of a spill, there are special reporting requirements. Provisions allow MMS to call for full-scale tests of oil spill containment equipment on short notice with observers from relevant agencies. There has been significant debate about technology standards, oil spill risk modeling, specification of minimum response time, personnel training, inspection schedules, and frequency and magnitude of tests.

In the event of oil spills, states and local government must help to ensure the rapid deployment of containment and clean-up equipment. To secure desired stipulations requires knowledge about capabilities of clean-up equipment and systems. This information must be coupled with information on ocean circulation patterns and on fate and effects of spilled oil. In at least one case, Florida Lease Sale 94 discussed in Chapter 3, a stipulation is in place that requires detailed plans for location and deployment of clean up equipment and site specific oil spill modeling as part of the exploration planning process.

Avoiding Hazardous Material (Explosives, Toxics, Radioactive Matter)

In the past, hazardous material such as explosives and toxic and radioactive wastes have been scattered over the seabed in legal and illegal dumping activities. Where there is reason to believe that hazardous wastes are present, lease stipulations require surveys prior to development activities to prevent environmental damages. Mitigating measures vary. They may prohibit structures in areas where surveys show hazardous materials to exist. They may preclude activities that disturb the material (e.g., require use of dynamically positioned drilling vessels). They may, in fact, state that no adverse effects to humans or the environment will result

if the material is disturbed, in which case the need for special measures is obviated.

States and local governments may have information on historical ocean dumping practices that justify these stipulations. Reports from fishermen of snagged barrels of toxic wastes, recollections of seamen, and other forms of systematic and anecdotal information can support these petitions.

Surveys for hazardous materials done in tandem with geophysical and geohazard surveys may ensure public safety and the safety of other marine users including the oil and gas industry. Certification of a clean bottom prior to leasing activities provides a baseline for identifying subsequent discards as a consequence of oil and gas activity.

Protection of Important Biological Resources

As noted above, there is no uniform approach to the treatment of biological resources. Important biological resources are generally single species or localized assemblages of species that justify specific recognition at the lease sale stage. For example, in Southern California Sale 35, stipulations are imposed which require protection of the unique biological areas on the Tanner Bank and Cortes Bank. Stipulations require barging of drill cuttings and muds away from the drill site, analysis of produced waters, and control over sewage and solid wastes from rigs and service vessels.

In Sale 97 in the Beaufort Sea, special industry site-specific monitoring of bowhead whale populations is required to help determine the effect of lease operations on their behavior. (See discussion on Alaska in Chapter 3.)

There does not seem to be a threshold value that qualifies a species or area for stipulation protection. In making determinations about lease stipulations for biologically important resources, "importance" is largely a matter of perception. Endangered species and marine mammals are already protected under federal law. Stipulations are not automatically written in their behalf. Stipulating protective measures may allow oil and gas development to proceed when there is special concern and uncertainty about the effect of these activities on unique biological communities or species. In some cases, protective measures are included in the Information to Lessees and Notices to Lessees.

Protection of Commercial Fisheries

Commercial fisheries are seldom singled out in stipulations although they are frequently covered by stipulations that protect biological resources discussed above. Southern California Sale 80 provides the only instance where a specific stipulation is used to protect a well-defined commercial fishery. In that case, mackerel fishermen received special protection in a stipulation that required use of jack-up drill ships in order to minimize interference from long anchor cables.

Lease Sales 80 and 92 also contain a stipulation that provides general protection to commercial fisheries activities by requiring lessees to cooperate regularly with fishermen (see discussion of private mediation of OCS conflicts in Chapter 5). The stipulation requires that exploration and development plans document agreements reached among the oil and gas and fisheries industries on vessel operation routes, impacts on use of dock space, and types of drillships to be used.

Two points are worth noting. Fisheries stipulations deal almost exclusively with operational problems the two industries might encounter, not biological problems. And the Sale 80 stipulation mandates industry to industry negotiations to develop mitigation measures, a highly unusual approach.

Parties interested in minimizing conflicts between oil and fisheries development need area-specific information on conflicts. Southern California and the Gulf of Mexico are two areas where there has been a history of interaction between the two industries. However, there are no special stipulations regulating the conduct of either activity, except as noted above.

Protection of Air Quality

The emission of volatile organic carbon compounds, nitrogen oxides, and other pollutants as a consequence of oil and gas development can significantly diminish air quality. However, lease sale stipulations for protection of air quality are rare. First, harmful emissions tend to occur at the drilling and production stage, not at the lease sale and exploration stages. Second, most air quality problems occur on land as the cumulative result of many human activities and natural contributing factors. MMS can do little about this since air quality management onshore is predominantly controlled by other agencies.

Southern California presents particularly severe problems of managing air quality. MMS, which regulates air quality on the OCS, was in the midst of rulemaking when Lease Sale 80 was being prepared for Southern California. A stipulation in Sale 80 put in place temporary air quality regulations to deal with the specific issue, while negotiated rulemaking for MMS air quality regulations takes place. It is unlikely that air quality stipulations will proliferate in lease sales because they are likely to be handled by general regulations. A review of air quality permitting issues is provided in the Santa Ynez case study in Chapter 4 and Appendix C of this report.

Requiring Onshore Oil Processing

Sale 80 is the only lease sale investigated that contains a stipulation that requires onshore processing. This requirement eliminates the possibility of processing at sea where air quality controls may be less restrictive. It also reduces risk of oil spills in the ocean. The stipulation was a result of negotiations and responds to the issues identified in the Exxon case in Chapter 4.

Protecting Visual Quality/Requiring Camouflage Paint

Visual quality is a major concern especially when rigs are located close to shore. Cases like the Coal Oil Point project discussed in Chapter 4 and Appendix C show the intensity of the issue. Only a few stipulations in early lease sales required use of such things as paint to camouflage oil and gas drilling and production facilities. However, there is relatively little that can be done to hide an offshore platform. Distance from shore provides the only visual buffer.

Unitization Agreement Requirements

Unitization agreements require the lessees to operate their production facilities in the same field in a manner to promote a maximum efficient rate of production and full recovery of oil and gas. Normally this is dealt with in other MMS regulations, but in the case studied here, Alaska's Diapir Field Sale 71, a stipulation was used to legally obligate lessees to a unitization agreement between MMS and Alaska in specific nearshore tracts.

At or near boundaries between state and federal waters, drilling may be prohibited for an arbitrary distance in order to prevent or reduce

field drainage, as seen in Southern California Sale 53. The distance from the boundary may range between 500 ft. and 750 ft. depending on geological circumstances, agreement with the state, and field unitization agreements.

Adjustment of Royalty Rates

Royalty rate stipulations are included in several of the early OCS agreements. These provide adjustments in the royalty rates if certain technical conditions are met. They do not address substantive environmental issues or other issues of concern. States may be interested in royalty rates and revenues if they apply to the area 3-6 miles offshore which is subject to a transfer payment to the state under Section 8(g) of the OCSLA.

Other

The remaining stipulations deal with a variety of issues. Southern California Sale P4 contains a stipulation regarding the welfare of workers and other persons on offshore rigs. In Diapir Field Sale 71, a stipulation requires application of an agreement regarding leasing of disputed tracts in that sale. It also deals with payment of Alaskan taxes on production from the disputed tracts. Sale 80 off Southern California allows the MMS regional manager to suspend or temporarily prohibit production or other operations or activity if this is necessary to complete operations or activities described in development or production plans.

PERMITS

This final section of Chapter 2 examines the permits required through the OCS exploration phase. Chief among these permits are:

- o Geophysical/geological permits and permits to drill issued by MMS.
- o National Pollution Discharge Elimination System (NPDES) permits issued by the U.S. Environmental Protection Agency (EPA) under a Memorandum of Understanding (MOU) with MMS.
- o Section 10 permits issued by the Army Corps of Engineers (COE).

These permits are required for each exploration or development and production project. Permits may have special conditions attached that apply to site- or lease-specific actions by the lessee. These permit conditions are in addition to the OCS Orders that apply in a region. Permit conditions often incorporate lease sale stipulations. They may also incorporate parts of the Notices to Lessees and Information to Lessees.

Other federal agencies consult with MMS prior to approval of plans for exploration, but they do not grant permits. The National Marine Fisheries Service, Fish and Wildlife Service, and National Park Service provide information about biological and cultural resources that is useful to MMS and the states.

Consistency review by states takes place at the exploration stage and is important in conditioning these permits. This receives more detailed treatment in Chapters 3, 4, and 5.

MMS Permits

MMS issues two permits relating to prelease surveys and to the Plan of Exploration (POE) process. The geological and geophysical permits are issued prior to the approval of the POE, since the work is needed to prepare the detailed information required in the Plan. The permission to drill, or APD permit, can only be issued after approval of the Plan of Exploration.

MMS issues geological and geophysical permits to parties wishing to do seismic and other survey work on the OCS. These specify the area, time, and method of survey and may be conditioned to protect or avoid other activities and uses of the area. This is usually done in consultation with state fish and wildlife management agencies and other federal agencies.

MMS generally requires that explosives not be used unless special conditions are met. Accidents must be reported and all pipes, buoys, and other markers used in seismic exploration must be marked. Special provisions may condition the surveys, though often they repeat the strictures of the lease sale stipulations. For example, there may be special mention of archaeological resource surveys, regulations on anchorage near biologically sensitive features, nonconforming uses of military zones, protection of endangered/threatened species, and control of electromagnetic emissions (Western Gulf of Mexico Lease Sale 105).

The APD permit is technically oriented. It specifies how the lessee must adjust operations to accommodate any special aspects of the operations. Types of drilling mud, rates of drilling, precautions for geologic structures, seasonal restrictions on drilling, and other matters may be called for in APD permit conditions.

States have an opportunity to influence the types of conditions attached to MMS permits at the exploration stage through their consistency review of the POE. The POE covers a large amount of information, some of which, however, is considered proprietary.

- o Proposed type and sequence of activities with timetables.
- o Descriptions of vessels, platforms, and structures to be used including safety and pollution prevention features.
- o Type of geophysical equipment.
- o Location information on vertical and directionally drilled exploratory wells.
- o Geologic maps and data.
- o Other data requested by MMS.

In addition, a special Environmental Report (ER) must accompany the POE. The ER must contain:

- o Description of the affected area.
- o Description of environmentally sensitive areas and alternative mitigating actions.
- o Description of procedures, personnel, and equipment used for oil spill prevention and control.
- o Information concerning onshore construction and land use with timetables.
- o Estimated population increase due to activities.
- o Traffic routes between shore and offshore operations.
- o Description of all wastes and pollutants to be generated.
- o Estimated demand on state resources due to operations.
- o Expected impact of activities on onshore and offshore environments.
- o Certifications to affected states with coastal management programs.
- o Data on lessee's representative.

NPDES Permits

The Clean Water Act (33 USC 1251 et seq.) established the National Pollutant Discharge Elimination System (NPDES) to regulate all discharges to the waters of the United States. In inland waters, permit authority may be delegated to states with approved state NPDES programs; in federal waters, EPA has sole NPDES jurisdiction; and in the territorial sea, responsibilities are shared.

Within the NPDES, discharges were initially regulated according to Best Practicable Control Technology Currently Available (BPT), representing the average of existing effective technologies. EPA promulgated discharge criteria for the Offshore Subcategory of the Oil and Gas Extraction Point Source Category in 1980. This means that effluent limitations and control technologies are specified for each type of discharge expected to occur, including domestic sewage and waste water, several categories of drilling fluids and muds, drill cuttings, and produced water. As discharge criteria were developed the standards changed to Best Conventional Pollutant Control Technology (BCT) for conventional pollutants and Best Available Control Technology Economically Achievable (BAT) for any of a list of "toxic" pollutants.

EPA is currently promulgating New Source Performance Standards for oil and gas discharges. This means that a more stringent standard, "best demonstrated control technology," will apply and that permits must be reviewed according to NEPA. Thus, EPA will be a more active participant in lease sale EIS's and will consider imposing tighter controls on oil and gas discharges.

General permits are authorized by the NPDES, whereby similar discharges within a planning area may be categorically approved. Such permits have been developed in most OCS planning areas, many applying to all oil and gas activity, but some applying only to exploratory drilling discharges. For either type of general permit, conditions may be set which trigger site specific analysis and individual permit review. Through a Memorandum of Understanding with MMS, EPA follows the lease sale planning timeline and seeks to issue the general permit when the Final Notice of Sale is published. This provides greater certainty to bidders about conditions which may apply to a lease.

The permits specify acceptable rates of discharge of drilling fluids, predilution requirements, amount of hydrocarbons permitted and other

restrictions. Acceptable drilling fluids and additives are specified. EPA inspects and monitors discharges, requires reporting by the permit holder, and may require additional monitoring or study as a condition of the permit.

In addition to the general conditions of the NPDES permit, EPA develops specific controls for areas of special biological sensitivity. These may include "shunting" of discharges to a specified depth below the water surface. In some areas all drilling discharges are prohibited, forcing transport of the materials to approved disposal sites. Finally, requirements may be placed on produced water, such as treatment before discharge or reinjection into the geologic formation.

COE Permit

Section 10 of the Rivers and Harbors Act (33 USC 403) requires that permits be obtained prior to offshore construction of structures or pipelines in U.S. navigable waters. This includes permits for exploration drilling vessels and for fixed and mobile platforms. Through the COE's public notice and review process there is ample opportunity for states to comment on the application for COE permits, and to suggest project modifications and mitigation measures.

CONCLUSIONS

The area identification process takes place at several steps in planning for a lease sale and extends over successive proposed sales in a planning area. The use of scientific information in defining deferral areas is often overshadowed by political influence.

Deferrals in the 5-Year Program can be made to protect coastal and offshore habitats that have been recognized as biologically significant and given special designation by other federal or state agencies. Military operating areas, sites of historic value, and areas with low resource potential may be deferred. These deferrals are not automatic, however, and the case for all deferrals must be made by an interested agency or organization.

At the 5-Year Program stage, based on comments on the proposed program, areas may be highlighted as candidates for deferral at

the later lease sale stage. Highlighted areas receive special attention in the environmental impact statement, Governor's comments, and agency recommendations.

The decision to defer is at the discretion of MMS and depends partially on scientific information but primarily on a broader political dialogue. MMS prefers to keep deferrals at a minimum. States and local governments prefer maximum levels of deferral to provide a greater degree of certainty about specific resources of concern and to narrow the area requiring more detailed analysis.

Deferral of large areas tends to occur because oil and gas resource potential is low or development is infeasible. Deferrals for protection of biological resources tend to be small (e.g., buffer strips or defined sets of tracts) although some larger exclusions have been made due to biological concerns.

Stipulations are legally enforceable mitigation measures which become part of the lease agreement between MMS and a lessee. Stipulations cover a wide range of issues.

Several categories of stipulations are included in almost all lease sales--archaeological/cultural, military (electromagnetic emission, operational controls, evacuation and hold harmless), and fisheries/wildlife training or orientation programs. Other stipulations are used where there are specific resource protection or operational concerns. A number of stipulations are used rather rarely but serve as indications of special concerns sufficiently significant to warrant inclusion in lease sales.

MMS is considering standardization of lease stipulations but recognizes the importance of regional variability. States must take an active role in proposing and promoting specific stipulations and may expect them to evolve over time.

Permits result in site-specific regulations on oil and gas exploration and production.

Permits apply to operations on specific tracts leased and are intended to ensure that risks are minimized from geophysical and geological surveys, drilling discharges of muds, cuttings, produced waters, and waste water, as well as from siting exploratory drilling and transport facilities.

The permit stage is more accessible to states than the lease sale stage because of the coastal zone management consistency determinations made at this time. POE's and DPP's must be consistent with federally approved state and local coastal management programs. States must initiate a dialogue with MMS, industry, and other federal agencies to ensure that feasible mitigation measures are developed.

Deferrals, lease stipulations, and permit conditions are management tools used to reduce the potential for adverse impacts from oil and gas exploration and development. They may be viewed as a hierarchy of mitigation measures in terms of geographic scope and level of protection. States have greater influence over permits than over stipulations, and least influence over deferrals.

Short of cancelling the lease sale, deferring areas from leasing provides the strongest means of protection, from the state perspective. It is evident that MMS does not generally believe that deferrals are necessary to mitigate impacts. Thus, unless special designation is achieved or political influence is applied, states have better success in negotiating for lease stipulations than for deferrals.

Some stipulations express general policies, such as pipeline preferences or training requirements, and they apply throughout the sale area. Others stipulations help focus attention on specific resources or information needs. Many stipulations reserve significant discretion for implementation by the regional manager of MMS.

It is at the permit stage that the focus of attention becomes site specific and that states can influence decisions most strongly. This is accomplished through consistency review and through consultation with the applicant, with MMS, and with non-MMS agencies issuing water quality and other permits.

The information needed for each type of decision varies, becoming more specific at the permit stage. The decision sequence is one of focusing geographically and focusing on key issues over time.

At the area identification level, the information required is usually broad in geographic scope. Of primary concern to MMS is the distribution of petroleum throughout the planning area. States are most concerned about the location and extent of biological resources in relation to expected drilling activity.

Concurrent with the identification of the lease area, stipulations are analyzed in the EIS process as to their effectiveness in reducing impacts. The location of drilling activities is still not known at this stage, so that many stipulations provide a mechanism for more information to be generated. Often, the focus of information used in writing and enforcing stipulations is on a specific habitat type or a specific aspect of the exploration, development, and production process. Background information on biological resources and development activities is needed.

Finally, significant new information about a specific site is often generated before a permit is granted. This information is included in the plans for exploration, development and production, and spill response. The type of information varies for the different permits but approaches the detail needed to predict potential impacts from activities which may occur on the lease.

There is a clearer relationship between information and decisions for stipulations and permits than for deferrals.

As stated above, deferrals are the strongest form of protection from adverse impacts when a lease sale is held. Prior to 1982 when lease offerings were much smaller, deferrals involved a relatively small number of blocks, identified for protection for specific reasons. When the area-wide leasing concept was introduced, the same deferral techniques were used to accomplish a much bigger job of balancing among interests within a very large proposed lease offering.

On the one hand, this shift helps focus attention on area identification by making it a key issue in lease sale planning. On the other hand, the tools used for weighing deferral alternatives are limited to a fairly general comparison of resource estimates and environmental impacts. Analysis by MMS is highly qualitative and state response is thus limited to qualitative arguments. The result has been the recurrent use of political influence and legal challenge against the MMS area identification process.

Compared with deferrals, stipulations and permit conditions apply more directly to specific habitats or operating procedures, and they frequently involve the generation of additional information. No similar shift in role occurred when area-wide leasing began. In general, it appears that stipulations and permits, as management tools, are more flexible and better suited to the tasks to which they are applied.

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3

Prelease to Exploration Case Studies

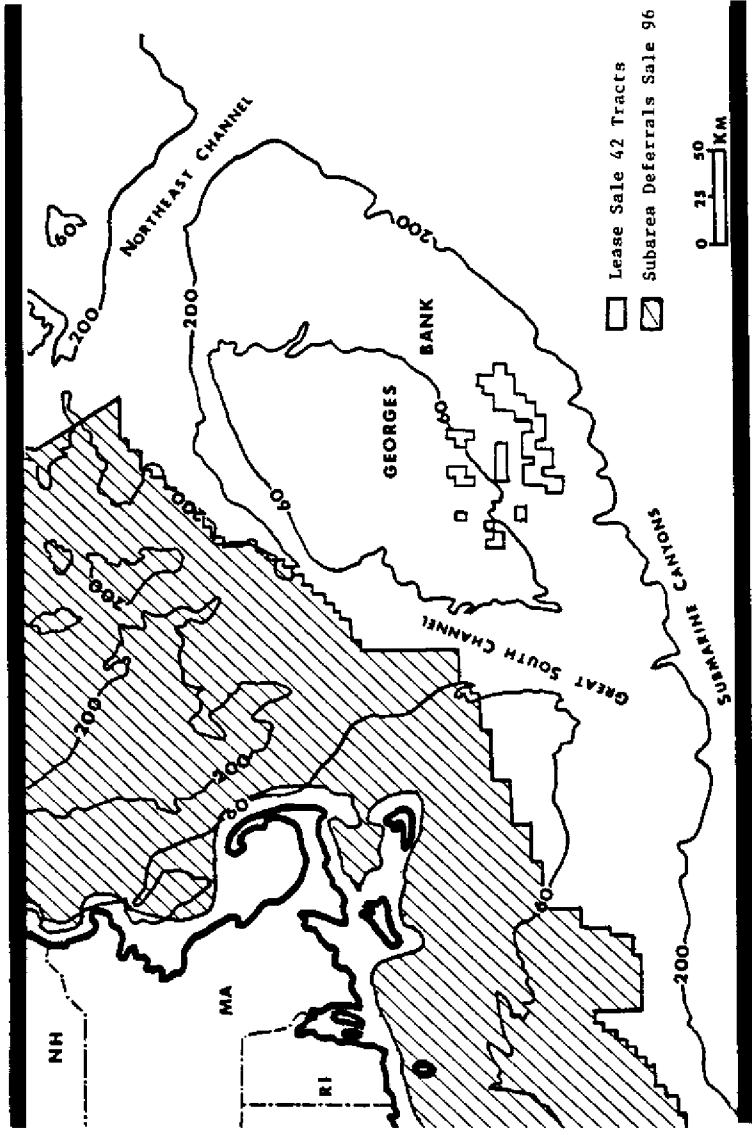
This chapter presents four case examples of OCS decision making from the Atlantic, Gulf of Mexico, and Alaska regions. The examination focuses on the area identification process, lease stipulations, and permit conditions at the exploration phase. The cases include sufficient contextual information, however, to reveal the interplay between decision-relevant information and other factors such as political influence and organizational behavior. The cases are:

- o Georges Bank, where highly valued fisheries have led to continuing controversy over four proposed lease sales.
- o The Eastern Gulf of Mexico, showing a variety of techniques for resource protection during exploratory drilling.
- o The Middle Atlantic, for which the applicability of oil spill trajectory models has been a key concern.
- o The Beaufort Sea, where endangered whales and subsistence hunting have been a focal point of decision making.

GEORGES BANK *Federal Level Influence over Regional OCS Issues*

The ocean region known as "Georges Bank," located off the Atlantic coast of New England, New York, and New Jersey, has been the site of intense controversy over offshore oil leasing and exploration since 1975 (see Hughes and Van Dusen 1987) (Figure 3.1). At issue are potential impacts to highly valued fisheries resources and potential conflicts between the oil and fishing industries.

Figure 3.1 North Atlantic Planning Area, Georges Bank.



Source: Battelle, 1985 and Minerals Management Service, 1987c.

Georges Bank represents a complex oceanographic and biological system including relatively shallow waters and an ocean gyre current which enhance marine biological productivity. Along its southern edge, the continental slope is cut by submarine canyons which provide diverse habitat for benthic communities. Concern has focused on the fate and potential effects of drilling discharges and spilled oil or gas.

Fisheries of the Georges Bank are diverse, including significant harvests of cod, flounder, haddock, scallops, lobster, and several other species. United States catch from the Bank in 1987 was 215 million pounds (97,505 metric tons) with ex-vessel values of \$180 million (Massachusetts 1988). About 89 per cent of the Georges Bank catch is taken by fishermen from Massachusetts, which has shown the strongest interest within the region in the debate over oil and gas leasing.

Conversely, petroleum resource estimates in this area are not large. In 1975 resources were estimated at 1,730 million barrels of oil (Backus 1987). After exploratory drilling was conducted, this has been drastically reduced to conditional mean resource estimates of 49 million barrels (MMS 1987e). This is very similar in magnitude to the conditional mean resource estimates of 58 million barrels in the Washington/Oregon planning area (MMS 1987e).

FEDERAL LEVEL INFLUENCE

Controversy began in 1975 with the initial proposal of Lease Sale 42, the only Georges Bank sale held to date. The *Argo Merchant* oil spill off Massachusetts in 1976 heightened public concern, and there has been nearly continuous debate over the issue through proposed Sale 52 (1978-83) and proposed Sale 82 (1982-85) and in planning for currently proposed Sale 96. Although the New England states were very active in this debate, the outcome on Georges Bank was clearly influenced by federal level actions.

OCSLA Amendments

In 1978, during the final prelease stages for the Sale 42, amendments to the Outer Continental Shelf Lands Act (OCSLA) were being debated in Congress. Anticipating the benefits of the amendments, the State of Massachusetts and the Conservation Law Foundation challenged the sale in court, and a preliminary injunction was issued.

While the case was on appeal, the OCSLA amendments were passed and signed into law. Subsequently, the federal court ruled that the sale should be conducted under the new rules. This provided for more direct participation by the states and required the Secretary of Interior to respond directly to states' concerns.

Marine Sanctuary Proposal

Also in 1978, by its authority under the Marine Protection, Research and Sanctuaries Act of 1972 the National Marine Fisheries Service of the National Oceanographic and Atmospheric Administration (NMFS/NOAA/DOC) conducted a preliminary review of Georges Bank for potential designation as a National Marine Sanctuary. New England states and the fishermen were initially skeptical about increased federal management authority for the Bank. With the lease sale looming on the horizon, however, the Conservation Law Foundation, representing regional fishing and environmental interests, formally nominated the Bank for sanctuary designation in 1979 (Hughes and Van Dusen 1987).

Supported by clearer evidence of public interest, NOAA pursued the sanctuary proposal and asserted that Sale 42 should not proceed until its formal review was completed and the sanctuary issue resolved (Finn 1980). Ultimately, through negotiations between NOAA and the Bureau of Land Management (BLM), the sanctuary designation was dropped and specific protection measures were adopted. These included the formation of a Biological Task Force and certain deferrals and stipulations for the lease sale.

NPDES Permitting

Requirements and responsibilities of the Environmental Protection Agency (EPA) for the National Pollutant Discharge Elimination System (NPDES) were discussed in Chapter 2. For Lease Sale 42, the NPDES review was the first conducted under EPA's ocean discharge regulations issued in 1980. Permits for exploratory drilling were delayed until 18 months after the sale, to allow completion of studies and evaluation of expected impacts. The states of Maine and Massachusetts played a key role in the review process, helping to assemble technical information and working with EPA, NMFS, and others to identify and satisfy additional information needs.

Individual NPDES permits were issued in 1981, including specific controls on discharge depth (10 meters below the surface), discharge rate (30 barrels per hour maximum), and predilution (10 to 1 ratio). It was only with these controls that the states found the permits consistent with their coastal management programs.

Congressional Moratorium

Subsequent Georges Bank leasing was affected by moratorium provisions of the Congressional appropriations bill for Interior in 1983. In the first of several such moratoria around the country, Congress prohibited expenditures for the leasing program for specific portions of the North Atlantic planning area. Affected were all areas north of 42 degrees north latitude, all areas more shallow than 60 meters, and several of the submarine canyons. The moratorium measure was renewed in 1984 through 1986. A revised moratorium measure included in the 1988 Interior appropriations bill prohibits lease planning in all waters shallower than 400 meters. The measure, promoted by Massachusetts Representative Gerry Studds, essentially bans leasing on Georges Bank for a period of one year (Hughes 1988).

AREA IDENTIFICATION

Of 1,927 tracts nominated for Sale 42, BLM proposed 206 for leasing in 1976. The sale ultimately offered 128 tracts, and bids were accepted on 63 of these. Twenty-eight tracts were deleted due to maritime boundary negotiations with Canada; 23 tracts deleted to reduce conflict with fishing operations; and 12 tracts deleted as a result of NOAA comments and concerns. A total of eight exploratory wells were drilled during 1981-82, but no economically recoverable resources were found.

North Atlantic Sale 52 was proposed under the "streamlining" policies of Interior Secretary Watt. The offering included 540 tracts, but the sale was challenged in court by Massachusetts and the Conservation Law Foundation and was ultimately cancelled by MMS in 1983 to make way for a new proposed sale. The lease offering for Sale 82 was greatly expanded under the "area-wide" leasing concept of Secretary Watt. Here, the entire North Atlantic planning area was initially considered. Large areas were deferred, but the offering remained at 2,988 tracts, more than 23 times the size of Sale 42. Once again, the sale was challenged in court

by Massachusetts and the Conservation Law Foundation. This sale was cancelled in 1985 because no industry bids were received.

A BIOLOGICAL TASK FORCE AND MONITORING PROGRAM

Central to state concerns over offshore drilling are potential impacts from drilling muds, cuttings, and produced waters. Impacts could result from toxicity associated with drilling fluid additives and produced waters, from increased particulates in the water column, or from deposition of muds and cuttings on benthic habitat. A National Research Council study has shown these impacts, at least in the short term, to be localized and of limited duration (National Research Council 1983). At the time of Sale 42, very little was known about their magnitude.

As a major result of the negotiations between BLM and NOAA, the North Atlantic Biological Task Force (BTF) was established in 1979 to advise BLM on issues relating to biological resource impacts. The BTF included representatives from NOAA, BLM, the U.S. Fish and Wildlife Service (USFWS), the U.S. Geological Survey (USGS), and the Environmental Protection Agency (EPA). As in other OCS regions, states were not members of the BTF. The BTF charter includes responsibilities to recommend needed environmental studies, surveys, and management techniques (North Atlantic BTF 1979). The primary product of the task force was a monitoring program to be implemented for wells drilled as a result of lease Sale 42 (North Atlantic BTF 1981).

The monitoring study included 13 "regional" sampling stations to provide "controls" and to assess long-term changes in the Georges Bank system. An additional 29 stations surrounding one well were used to assess short-term impacts from exploratory drilling. These studies measured the quantities, characteristics, fate, and effects of the discharged materials and compared them with background levels on the Bank. The study compared monitoring samples with detailed reports on discharges from the rig operators.

Results of the study received mixed interpretation. One component of the study reported no significant changes in benthic community structure (Battelle and W.H.O.I. 1985). It was recognized, however, that exploratory drilling was limited in scope and duration, so that the explanatory power of the monitoring program was necessarily limited. Massachusetts has contended that the few observed impacts from limited

exploratory drilling does not ensure the same results from more extensive exploration and development activities (Massachusetts 1984). DOI, for its part, holds out the monitoring results as clear evidence of low potential impacts (MMS 1984).

The BTF has been inactive since completing its review of monitoring results and since the cancellation of Sale 82 in 1984. The Georges Bank BTF was unique in being formally chartered (North Atlantic BTF 1979). Its charter expires in 1989, and its continued existence and composition are subjects of debate in the current proposed North Atlantic Sale 96.

BENTHIC HABITAT STIPULATIONS

Because of its important fisheries and its proximity to major marine research institutions, an extensive body of information has been developed about the oceanography and biology of Georges Bank. As a result, the importance of submarine canyons as habitat for lobster, tilefish, and other species emerged as a subject for specific management attention.

After continued debate during earlier sales, a stipulation on Sale 82 designated NOAA to define submarine canyons comprising the critical habitats. The stipulation would have prohibited drilling within 200 meters of the canyons. It also established a 4-mile buffer zone subject to either a monitoring program during exploratory drilling or to special discharge criteria developed by EPA.

On Georges Bank, as elsewhere, OCS decision making to protect specific resources occurs in an incremental and uncertain manner. The exclusion of canyon blocks had begun in Sale 42, amid intense interagency negotiations. In Sale 82, the area excluded from leasing was increased substantially. However, the exclusion area was reduced by more than half between the Proposed and Final Notice of Sale stages, apparently due to changing interpretations of whole- and half-block designations.(Clark 1988) For Sale 96, EPA has questioned MMS interpretation of canyon blocks to be included. And Massachusetts has requested that all areas shallower than 400 meters depth be deferred, to include the upper portions of all the submarine canyons. It is evident that the debate will continue, and it is important to note that the canyons are just one of the valued habitat types on Georges Bank.

CURRENT STATUS

North Atlantic Lease Sale 96 was proposed for February, 1989. The area considered for lease excluded a nearshore buffer zone, the entire Gulf of Maine, plus other portions of the Congressional moratorium area. Comments on the Sale 96 Draft EIS are instructive.

Massachusetts applauds the EIS for its literature cited, its treatment of chronic and sublethal effects, and its attention to the Georges Bank as an ecosystem (Massachusetts 1988). The State stresses the need to include all proposed stipulations and to add stiffer stipulations on canyon blocks and on oil-spill-response training and equipment. The State also calls for the continuation of the Biological Task Force.

In addition, Massachusetts points to two deficiencies in the EIS. First, recognizing the "gas prone" nature of the region, the State feels that inadequate attention is given to potential chronic impacts from gas blowouts or spills, especially considering recent analysis of these impacts by Canadian researchers (Canada Oil & Gas Lands Administration). Second, the lack of an indication of geologically promising areas is noted, and discrepancies among general statements about geological structures are emphasized. The State feels that adequate planning and analysis demand such geological information. Finally, a case is made for deferring the entire sale, given MMS's projections that no development and production will result from the sale.

EPA has also taken an interesting position on Sale 96. Comments from EPA Region I were highly critical of the EIS (EPA 1988b). They echo the State's concerns about information on geologically promising areas and re-emphasize the nature of the trade-off between a known highly productive fisheries resource and the expected very low potential for energy benefits. Noting MMS's statements that this is an "exploration only" sale and that it is part of MMS program to "inventory" U.S. offshore resources, the Region questions MMS authority to do so under the OCSLA. The comments present a firm position against the sale.

In a move that has caught the attention of the local media (Boston Globe 1988a), EPA's national headquarters overruled the regional EPA views. Thus, the official EPA comments on the EIS note areas of continuing concern but retreat from earlier recommendations to defer the sale (EPA 1988a).

The Secretary of Interior, apparently for both political and strategic reasons, has delayed Sale 96 for at least one year (Interior 1988a). He proposes a two step process for resolving issues relating to Georges Bank petroleum leasing:

- o To commission the National Research Council to evaluate information on petroleum resource potentials and environmental risk. A proposal has already been submitted for this task (National Research Council 1988)
- o To convene a regional task force of federal and state interests to negotiate conditions under which leasing can proceed.

SUMMARY

This case has shown how national level issues and federal agency actions can influence OCS decision making. These federal-level actions often support the position and interests of the state. This is seen on Georges Bank in the Congressional moratorium, the marine sanctuary nomination, the Biological Task Force, and EPA permitting and EIS comments. The State of Massachusetts, however, has been perhaps the most active participant in Georges Bank OCS activities. The State OCS coordinator asserts that the impetus for many of these federal actions came from research work and pressure applied by the State (Hughes 1988).

There is broad interest in balancing between OCS development and fisheries resource protection, but agreement about how this balancing should occur has not been achieved on Georges Bank. Only now, during the fourth proposed sale, is an attempt at more formal negotiation being proposed through the development of an intergovernmental task force.

The Georges Bank experience indicates how management attention can be focused on particular resource issues, such as the gyre currents and submarine canyon habitat. The monitoring program was designed to answer fairly specific questions about the fate and effects of drilling discharges. As the following cases also show, there is seldom agreement about the implications of such studies for management.

EASTERN GULF OF MEXICO

Mechanisms for Site-specific Resource Protection

The State of Florida has faced federal OCS leasing in the South Atlantic and Straits of Florida planning areas of the Atlantic region and the Eastern Gulf planning area of the Gulf of Mexico region (Figure 3.2). Chapter 5 discusses the way in which Florida has organized to respond to this complex leasing picture. Lease sales have been held in each of the planning areas beginning with a 1959 sale in the Florida Keys. Most exploratory drilling has occurred in the Eastern Gulf of Mexico (36 of 42 total exploratory wells), though no economically recoverable resources have been reported offshore Florida. Industry interest continues at a modest level in the Destin Dome area (off the Western panhandle) and the South Florida Basin areas.

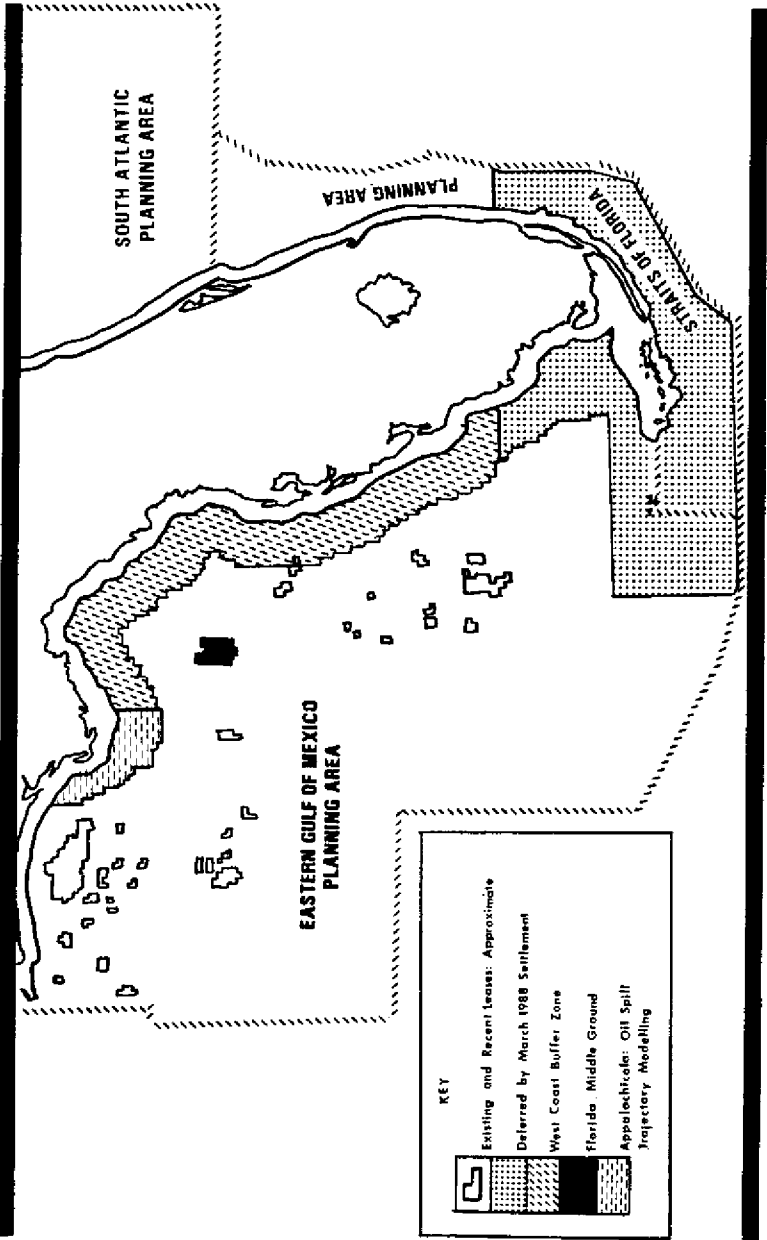
OCEAN RESOURCES

The seafloor of the Eastern Gulf is primarily a carbonate (limestone) shelf, with relatively thin sediment cover and scattered coral reefs and rock outcrops. Productive benthic habitat, commonly called "live bottoms," are broadly dispersed out to at least 200 meters depth. MMS defines live bottoms as:

Seagrass beds; or those areas which contain biological assemblages consisting of such sessile invertebrates as sea fans, sea whips, hydroids, anemones, ascidians, sponges, bryozoans, or corals living upon and attached to naturally occurring hard or rocky formations with rough, broken, or smooth topography; or areas whose lithotope favors the accumulation of turtles, fishes, and other fauna (MMS 1985a).

These dispersed habitats are quite different from the "banks" of the Central and Western Gulf planning area, which rise conspicuously from the deeply sedimented basin. In the Central and Western Gulf, valued habitat has been identified according to simple bathymetric criteria. This is not as simple for the equally valued live bottoms of the Eastern Gulf, and several regulatory measures have been developed to identify and protect them.

Figure 3.2 Eastern Gulf of Mexico, Florida.



Source: Minerals Management Service, 1987c; Florida, 1987; Florida, 1988b.

Because of the biological, fisheries, and recreational values of these live bottom resources, Florida places a high priority on protecting them. Florida also values its coastal resources such as sand beaches, estuaries, and mangrove swamps. As discussed below, an extensive buffer zone helps protect these coastal resources, so that state/federal interactions have focused on the deeper offshore environment.

STATE POLICY

A special policy advisor and a small unit within the Governor's office have dealt successfully with the Minerals Management Service and the OCS leasing process. Since 1979, the State has articulated and followed a policy that does not oppose offshore exploration and development. The State insists, however, that needed environmental studies are conducted and mitigating measures are implemented to ensure no adverse impacts to biological resource or the economy they support (Florida 1987). As a result, significant information has been produced and important compromise and accommodation have been achieved.

AREA IDENTIFICATION

Florida has consistently proposed deferral alternatives on the basis of identified resources and in areas where adequate resource information is not available (Florida 1987). Following a pattern of direct participation in the OCS leasing process, the U.S. Congress attached a moratorium measure for the Eastern Gulf to the 1984 Interior appropriations bill. The measure specified deferral areas and required a 3-year program of data collection and analysis for other areas. The deferral areas have been incorporated into subsequent lease sales, and review and interpretation of the studies is nearing completion.

Deferral alternatives for recent lease sales have included:

- o A 20 - 30 mile wide coastal buffer zone extending from 26 degrees north latitude on the southwest coast to Apalachicola on the Florida panhandle. This was a major part of the 1984 moratorium and has in large part been carried into the new 5-Year Plan for future lease sales (MMS 1987c).
- o An area of 23 blocks known as the Florida Middle Ground, which is a live bottom reef 75 miles offshore. Florida has proposed deferral of a 30-mile buffer surrounding the Middle Ground but

- feels that special discharge provisions for the area are a more likely result (Tucker 1988).
- o Two areas of seagrass beds, the Big Bend area lying within 20-miles from shore and the Dixie Offshore Seagrass Beds extending out to about 30 miles. Both areas were included within the moratorium's West Coast buffer zone, were subject to debate in subsequent sales, and are deferred from sales under the current 5-Year Plan.

AREA-WIDE DEFERRAL

Significant controversy attended proposed leasing in the "Straits of Florida" planning area. This encompasses the Florida Keys, a biologically sensitive and publicly treasured resource. Two of the Keys are designated National Marine Sanctuaries and are included as small subarea deferrals in the current 5-Year Plan. Florida had filed suit against the Secretary of Interior on the basis of the plan.

A March, 1988, agreement between Florida and DOI was significant, then, because it occurred at the 5-Year Plan stage. DOI has not been responsive to requests for large scale alteration or cancellation of sales at this stage. Florida agreed to drop its 1987 suit against the Plan in exchange for a specific set of conditions on future proposed sales. These provisions include:

- o Cancelling the entire Straits of Florida Lease Sale 140 and deleting large areas of the Eastern Gulf adjacent to both the Keys and the Everglades.
- o Delaying portions of proposed Eastern Gulf Sale 116 involving the sensitive Apalachicola area.
- o Protecting the Apalachicola area through the development and application of an oil spill risk assessment, containment, and clean-up stipulation. (Florida 1988b).

LEASE STIPULATIONS

As in other OCS leasing areas, several common stipulations have been applied to Eastern Gulf sales, including stipulations concerning archaeological resources, a pipeline transportation preference, and military use areas. In ongoing negotiations between MMS and Florida, additional specific stipulations have been developed or proposed.

Live Bottoms. A common stipulation on OCS leases concerns the protection of "Biological Resources." In the Florida sales, this stipulation has been modified through successive lease sales to specifically focus on "Live Bottom Areas." Several versions of the stipulation have been debated (MMS 1985b). The stipulation adopted for Sale 94 applies to exploration activities in water depths less than 100 meters and to development and production activities in depths less than 200 meters. Applicants for drilling permits must submit a map and photo documentation of seafloor characteristics and biology within a 1820 meter radius of a drilling site. As in other biological resources stipulations, the MMS Regional Director can impose siting or other mitigating measures where such resources may be at risk.

Oil Spill Protection. As called for under the March, 1988, consent agreement, an oil spill containment/clean-up stipulation will apply to the panhandle area. Under the stipulation, permits will specify what containment/clean-up equipment must be on site and specify how quickly equipment stored on shore must be able to respond to a spill. Site-specific oil spill trajectory modeling may be required for certain areas. Results of the modeling would be used in defining the equipment requirements.

Discharge Limitations. Florida has proposed a stipulation on discharge methods, to be applied in buffer zones around areas of biological significance. A memorandum of understanding (MOU) between EPA and the State is being considered which would include such provisions in any NPDES general permits for the Eastern Gulf (Tucker 1988). The proposed MOU includes a process for determining when an application to drill falls outside the general permit and requires a site-specific individual permit. Although MMS normally declines to write discharge stipulations due to the permit authority of EPA, states feel it is important to formally recognize discharge requirements in the lease. Often, MMS will include an Information to Lessees clause to this effect.

Clearly evident in the Eastern Gulf is the State's power to condition exploratory drilling permits and NPDES permits. This authority comes from the consistency provisions of the Federal Coastal Zone Management Act (FCZMA) and the policies of the State's approved Coastal Management Program. The authority is formally recognized through MMS Information to Lessees clauses and through the proposed MOU with the EPA.

Florida has developed and applied standards to the conduct of live bottom surveys and oil spill trajectory modeling. Also, it is taking the lead in developing specific criteria for the proposed discharge controls. In using this authority, Florida works closely with applicants to address site-specific conditions (Tucker 1988).

A RESEARCH PROGRAM

Provisions of the 1984 Congressional moratorium called for three years of data collection and analysis prior to exploratory drilling or further leasing on the Southwest Florida shelf. A number of leases are held in this area, but processing applications for drilling permits was suspended by the moratorium.

Responding to the moratorium, MMS commissioned a series of five studies through the Gulf of Mexico regional Environmental Studies Program. Objectives for the program were defined, generally calling for "improved" understanding of biological populations, ecosystem relationships, and physical features and processes. The specific objectives did not include reference to OCS decision making, but an overall goal was to determine the potential for impacts from oil and gas activities on live bottom communities (Florida 1988c).

Upon completion of the studies in 1987, the Governor's office convened a panel of 30 scientists from Florida and throughout the Southeast. They were instructed to review the studies according to specific questions concerning either physical oceanography or biology. Results of the review were synthesized and interpreted by the Governor's office staff in a draft report to MMS (Florida 1988a). The report praised certain aspects of the study program but maintained that vitally important information had not been developed. Detailed comments on this report were prepared by MMS and submitted back to the Governor's office (MMS 1988). The MMS response called attention to the 26 prior studies of the region and asserted that the authors of the report did not properly understand the scope and sequencing of MMS information gathering efforts through the stages in the leasing process.

The tone of these documents suggests that the two parties are taking positions concerning the adequacy of existing information for proceeding with exploratory activities on the Southwest Florida shelf. Both parties recognize that a "complete" understanding of the region is not feasible and that more information will be developed through site-specific

surveys and further studies. Nevertheless, they continue to disagree about the levels and types of information required at the various stages in the process.

As of this writing, two exploratory drilling permits for the Southwest Florida shelf are being reviewed by MMS, which feels that provisions of the Congressional moratorium have been satisfied. Recognizing the State's concerns, however, the Secretary of Interior has suggested that two task forces be established to attempt resolution of the conflict (Interior 1988a). One task force would address oil spill trajectory issues, and one would focus on potential impacts in south Florida. Finally, the 1988 Interior appropriation bill continues the moratorium provisions for parts of the Southwest Florida shelf.

SUMMARY

The Eastern Gulf experience clearly shows a bargaining process by which exploratory drilling has been accommodated and mitigating measures have been achieved. Political intervention is evident in the moratorium measure, and political accommodation is seen in the recent negotiated agreement between DOI and Florida.

A creative approach has been taken to successively narrowing the focus of attention through the course of decision making. Techniques include area-wide studies, deferrals, spill response requirements, site-specific surveys, and discharge controls. Broad scale understanding is gained area-wide, leading to more specific analysis before drilling begins.

Nonetheless, the case also demonstrates the continuing debate over the adequacy of environmental studies. Even when a pattern of compromise is evident, the state has strongly requested more baseline information to guide activities in frontier areas.

MIDDLE ATLANTIC *Adequacy of Oil Spill Risk Analysis*

The State of North Carolina straddles the border between the mid-Atlantic and South Atlantic OCS planning areas (Figure 3.3). Neither area has shown economically recoverable reserves of oil and gas, and sales have been cancelled (e.g, Sale 111, cancelled in 1986), in part due to a lack

of industry interest. Nonetheless, significant numbers of exploratory wells have been drilled (32 wells, mid-Atlantic; 6 wells, South Atlantic; 1978-1984) and lease offerings continue to be proposed.

North Carolina has taken an active interest in the OCS decision process for these planning areas. The state has been concerned about valued commercial and recreational fisheries resources and a highly valued shoreline of barrier islands and productive estuaries.

The continental shelf off North Carolina is broad: the 200 meter isobath occurs between 20 and 120 miles offshore. The State has sought to prohibit leasing within the 200 meter isobath.

Of particular concern is the influence of the Gulf Stream on the ocean currents of this region. Meanders and spin-off eddies of the Gulf Stream can reach far shoreward and could carry spilled oil to the coast. Evidence of this effect is seen in the distribution and movement of a "red tide" organism on the North Carolina coast in recent years. For this reason and others, the State asserts the need for further understanding of the risks of offshore leasing and exploration.

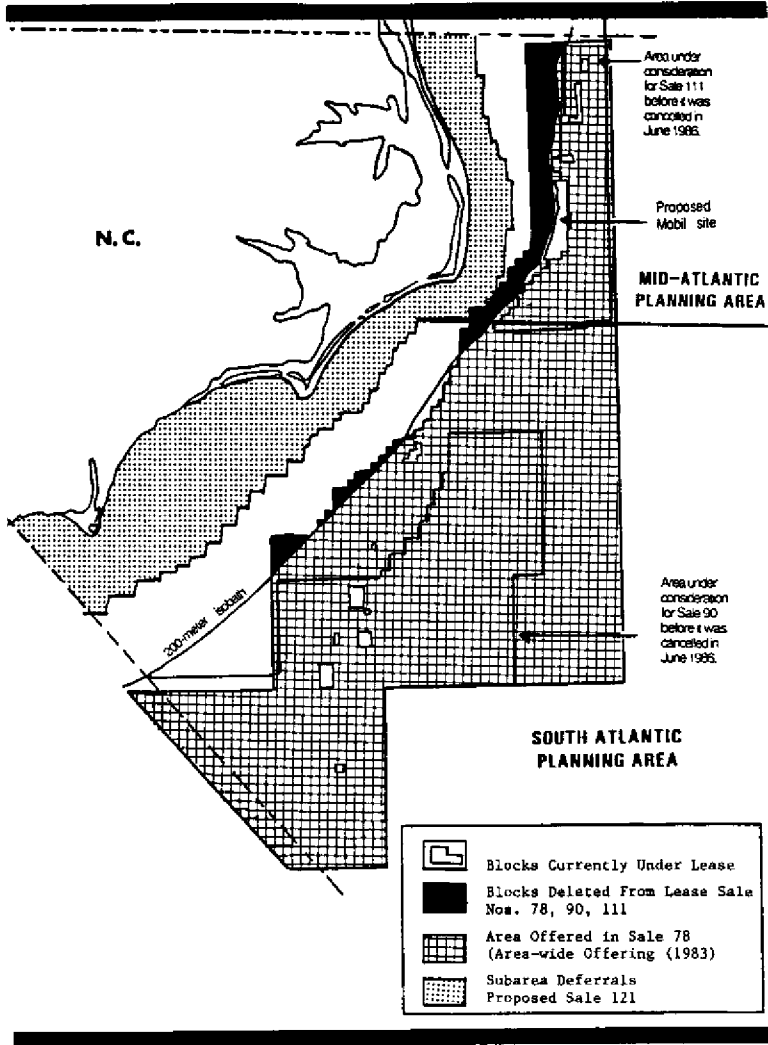
A MEMORANDUM OF UNDERSTANDING

Under the threat of litigation, and with the aid of significant political pressures (Moffit 1988), the Minerals Management Service and North Carolina negotiated a Memorandum of Understanding (MOU) prior to South Atlantic Sale 78 in 1983 (North Carolina 1983). Through the MOU, MMS agreed to:

- o Defer areas within the 200 meter isobath, including the *USS Monitor* Marine Sanctuary.
- o Convene a technical panel, with representatives nominated by both MMS and the State, to review the applicability of the MMS Oil Spill Risk Assessment (OSRA) model to the sale area.
- o Implement all recommendations of the technical panel to improve the model and rerun the model prior to structuring and analyzing future sales.

In signing the MOU, North Carolina agreed not to file suit opposing the lease offering and to find the lease offering consistent with the State's approved coastal management program.

Figure 3.3 Middle and South Atlantic Planning Areas, North Carolina.



Source: Minerals Management Service, 1987c.

ANALYSIS OF THE OIL SPILL RISK ASSESSMENT MODEL

Initial implementation of the MOU took place during 1984-85, while planning for Mid-Atlantic Sale 111 was under way. A study was funded to conduct a preliminary analysis of oceanographic data off North Carolina for oil spill risk analysis. The study was conducted by the Research Triangle Institute and North Carolina State University. Principal Investigators on the project included people whose work had been used earlier in preparing the State's case for the MOU. This does not impugn the quality of the work produced, but shows that selecting the consultant for this analysis was an additional concession to the State by MMS. The study showed significant discrepancies between results of the OSRA model and the results of modeling using actual current data from the shelf (Vukovich et al. 1984).

North Carolina was dissatisfied with the slow MMS response to the MOU. In all, it took 19 months to convene the technical panel, when the MOU had specified only 7 months before results of the review would begin being used. Finally, the panel convened and agreed upon the scope of its review. The panel examined the basis for the OSRA model, indicated significant deficiencies, and recommended a 5-year program of studies to improve it (OSRA Panel 1985).

Meanwhile, MMS had continued with National Environmental Policy Act (NEPA) review for Sale 111, issuing its Draft Environmental Impact Statement (EIS) before the panel was convened, and the Final EIS before the panel's recommendations were prepared. North Carolina considered suing over the adequacy of the EIS, feeling that the terms of the MOU had not been satisfied by MMS. The sale was delayed and eventually cancelled, ostensibly for lack of industry interest.

Subsequent to Sale 111, further studies were conducted under the MMS Environmental Studies Program. The first study sought to improve the Atlantic Circulation model by accounting for Gulf Stream effects and other observed water movements. The second was a field study to gather data by which the improved model could be tested.

In the currently proposed Mid-Atlantic Sale 121, North Carolina has objected to the inclusion of 109 blocks situated within the 200 meter isobath (North Carolina 1988). The State asserts that the provisions of the 1983 MOU calling for improved understanding of the shelf currents and gulf stream eddies have not been satisfied. In Sale 121 EIS scoping

comments, the State cites additional questions raised by recent studies and calls attention to:

- o Field study results which show cold shelf water moving onshore -- movements which are not factored into the OSRA model.
- o Other circulation patterns, such as those indicated by the movements of "red tide" blooms onshore and within estuaries -- patterns neither explained nor predicted by the OSRA model.
- o The limited extent of field studies with respect to accurate characterization of Gulf Stream eddies.
- o Concerns over the Atlantic striped bass stock, which has been severely stressed and is protected through federal legislation.

A NEW PROPOSAL

Having seen prior sales cancelled for lack of industry interest, North Carolina was surprised, recently, to learn of a new plan for exploratory drilling by Mobil Oil Company (Moffitt 1988). Mobil believes it has located a major gas field and proposes to drill on a 1981 lease in more than 3,000 feet of water to locate the field.

Further, the company hopes to secure and develop a 21-block unit, expecting to purchase leases in shallower waters of the shelf where development drilling would be done. If Mobil's application is processed on schedule and drilling is successful, the company would have key information to guide its bidding in Sale 121, scheduled for December, 1989.

It is ironic that much of the debate over leasing in the mid-Atlantic has involved the OSRA. Mobil claims that spill impacts and trajectories are much less important for gas than for oil development. Once the Plan of Exploration is submitted, the State will have 20 days to submit comments to MMS and 90 days to prepare its consistency review.

SUMMARY

This case shows how the use of scientific information to guide leasing decisions is a time-consuming and uncertain process. Management attention was focused on a critical oceanographic issue, but studies seemed to raise more questions than they resolved.

North Carolina's experience indicates that great care must be taken in setting up a process for resolving conflict. Studies have been

conducted under the MOU, but the experience was highly frustrating and does not appear to have had lasting benefit. Further, with the recent attention to gas resources, a very different set of issues may need to be addressed in a fairly short period of time.

ALASKA'S BEAUFORT SEA

Endangered Whales and Subsistence Hunting

The State of Alaska is surrounded by an extremely large OCS region which is divided into 15 separate planning areas. Since the first Gulf of Alaska lease sale in 1976, federal leasing has been conducted in 6 of these areas. More than 70 exploratory wells have been drilled, but no OCS production has occurred. Oil is no stranger to Alaska, however. Offshore production has occurred in Cook Inlet under state leases since the mid-1960s and on the North Slope.

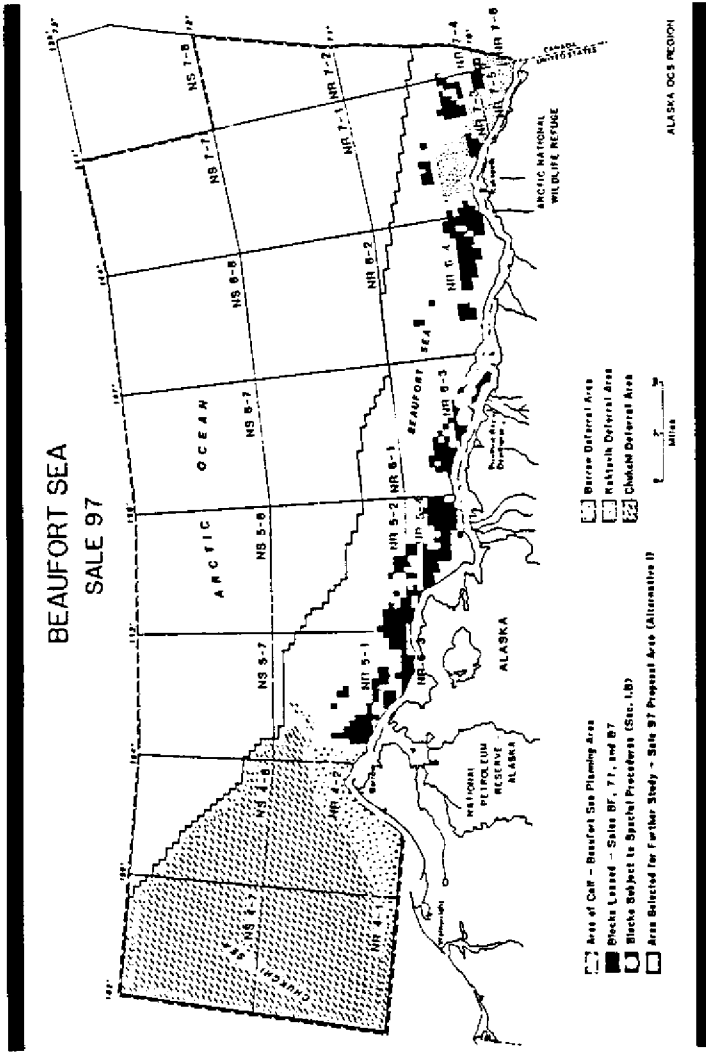
Industry demonstrated considerable interest in the Beaufort Sea planning area (Figure 3.4), following the development of the North Slope/Prudhoe Bay field in the 1970s. Despite the remoteness of this region and its low population densities, there has been extensive study and continued debate over oil and gas leasing and exploration.

OCS leasing in the Beaufort Sea was conducted through joint federal/state Lease Sale BF (1979); federal Sales 71 (1982), 87 (1984), and 97 (1988); and four State of Alaska sales. Total federal leased acreage was about 3.5 million acres as of 1987. Producibile oil and gas has been located, but, due to depressed prices and increased logistical and transportation costs for the Arctic region, no production has occurred (MMS 1987a).

KEY RESOURCE CONCERNS

Environmental impact concerns in the Beaufort Sea relate to its unique physical and biological features and to traditional patterns of human settlement and resource use. Capabilities for oil spill clean-up, especially in broken ice conditions, have been questioned and studied extensively. The critical habitat characteristics of open water leads during spring break-up have been recognized, and operational controls to protect migratory sea birds and marine mammals have been debated. Potential water quality impacts from marine discharges have been extensively

Figure 3.4 Beaufort Sea Planning Area, Alaska.



Source: Minerals Management Service, 1987b.

analyzed in the National Pollutant Discharge Elimination System (NPDES) permit review. Specific productive benthic habitats, such as the "boulder patch" have been identified and mitigation measures developed to protect them. And the subsistence hunting and fishing activities of native Inupiat Eskimos have been recognized.

This section focuses on concern over bowhead whales which migrate through and feed in Beaufort Sea leasing areas. This cetacean is important because of its designation as an endangered species and because it is harvested for subsistence purposes by the Inupiat. A variety of management options have been developed.

AREA IDENTIFICATION

The most recent Sale 97 provides a good perspective on the consideration of deferral alternatives. As described in the final EIS, about 3,500 blocks (19 million acres) were considered for lease, constituting the entire unleased planning area shoreward of the shelf break zone (MMS 1987b).

The EIS describes three proposed deferral alternatives, evaluating each according to its contribution to estimated petroleum reserves and its effects in reducing overall impacts to biological populations and endangered species, socioeconomic and cultural systems, subsistence uses, land use plans, air and water quality, and recreational uses. The EIS analysis results in impact rankings (i.e., negligible, minor, moderate, major), and deferrals are evaluated by how they may shift impacts for each category into a lower ranking.

This system is imprecise, at best. In most cases, no reduction in impacts was predicted through deferral. In part, this is because the environmental benefits of deferral are measured against the overall scope of the sale area. Thus, as represented in the EIS, a significant reduction in risk to resource in the deferral area may be masked by the sheer magnitude of the planning area. This type of evaluation by MMS draws significant criticism in DEIS comments, in that it downplays the innate value of the resources being considered. The deferral alternatives for Sale 97 were:

- o The Barrow Deferral: 201 blocks offshore Point Barrow in an area where bowhead whales migrate and are hunted by the Inupiat.

The deferral was recommended by a variety of agencies including the State of Alaska, North Slope Borough, Alaska Eskimo Whaling Commission, NOAA, and EPA. The deferral would reduce the acreage offered by about 5 per cent and reduce mean resource estimates for the lease offering by about 3 per cent. This was the only area ultimately deferred by MMS for Sale 97.

- o The Kaktovik Deferral: 161 blocks in the Eastern Beaufort Sea, a key feeding ground for bowhead whales and hunting area for resident Inupiat. The same agencies recommended this alternative. The deferral would have reduced the acreage offered by 4 per cent and mean resource estimates by 14 per cent. Thus it is an area of much higher resource potential than the Barrow deferral area.
- o The Chukchi Deferral: 1,592 blocks making up most of the western portion of the lease offering. The deferral would have reduced the acreage offered by about 46 per cent but the mean resource estimates by only 5 per cent.

Several points are worth noting about the consideration of deferral alternatives. First, 41 blocks within the Barrow area had been deferred from Sale 87. This is roughly the same percentage of the total lease offering as the 201 blocks deleted from Sale 97. With more than twice the acreage being offered in the second sale, it is fairly easy for the Secretary of the Interior to concur in the deferral as a reasonable "balancing" while the actual lease offering remains an enormous 19 million acres. In his "balancing letter" to the Governor, the Secretary stresses the lack of significant industry interest in the deferral area as much as the environmental protection benefits achieved (Interior 1988b).

Second, the State of Alaska cites state policy of avoiding deferrals if there are adequate mitigating measures for reducing risk (Alaska 1987b). To assure adequate mitigation, the State is very active in pressing for lease stipulations and Information to Lessees clauses (ITL's) and also is active in prescribing conditions under which state coastal management consistency may be granted for drilling permits.

Third, in accord with its policy on deferrals, the State recommended deferral of the Kaktovik area at the EIS stage, but did not press for the deferral in Section 19 comments. Rather, the State pointed to studies that were contracted by MMS which attempted to quantify the

relative value of the area as bowhead whale feeding habitat and to assess potential noise and disturbance impacts on the whales. The State relied on a review of the feeding study which had been sponsored by MMS but conducted by the North Slope Borough Science Advisory Panel (NSB 1987). Alaska criticized the study and recommended that a special panel be assembled to design and conduct further studies before leasing should occur (Alaska 1987a). The MMS, in its balancing letter, defended the feeding study results and cited stipulations and ITL clauses which, it maintained, strike a reasonable balance of protection and development goals (Interior 1988b).

MITIGATING MEASURES

It is important, then, to review the development of mitigating measures in conducting Beaufort Sea lease sales. These measures include lease stipulations, information to lessees clauses, monitoring and study requirements, and State consistency provisions on drilling permits.

In the earliest Beaufort Sea lease sales, seasonal drilling restrictions were implemented to protect migrating whales. In Sale BF a lease stipulation limited drilling to five months of the year. The stipulation was relaxed for Sale 71 to a 10 month drilling season, and was replaced for Sale 97 with a monitoring requirement. This last stipulation specifies blocks and seasons in which lessees must monitor for the presence of migrating whales and for the effects of drilling activity on whale behavior.

A companion ITL clause identifies an ongoing area-wide monitoring program on whale distribution and behavior, noting that future exploration and development may be influenced by study results. Within the ITL, MMS cites the National Marine Fisheries Service's most recent Biological Opinion pursuant to Section 7 of the Endangered Species Act. The opinion stated that exploration activities would not likely jeopardize the endangered populations, but that development and production activities would place them in jeopardy (MMS 1987b, Appendix J).

The State of Alaska has also relaxed its stance on seasonal drilling requirements, noting that experience and evaluation gained through ongoing studies and monitoring have narrowed the scope of perceived risk to the whale population. The state continues, however, to propose specific restrictions for certain areas and types of drill rigs. Alaska officials were dismayed that MMS dropped the stipulation for Sale 97, but they believe that their working relationships with industry and their power of coastal

consistency review will result in the observance of existing seasonal drilling restrictions (Fredriksson 1988).

An additional stipulation for Sale 97 requires lessees to consult with native hunters in the lease area and to report in their plans for exploration about accommodations and disagreements with local whalers. These discussions and negotiations are conducted through a whaler/oil-industry working group, and a variety of techniques have been devised to mitigate against impacts to Eskimo hunting. In at least one case, the industry helped whalers transport whales once they were killed.

CZM CONSISTENCY

The State of Alaska exerts further influence over the conduct of OCS exploration and development activities, through its review for consistency with the Alaska Coastal Management Program (ACMP). Chapter 5 discusses the unique Alaska system for consistency review. The State reviews each exploratory drilling permit application according to standards of the ACMP for subsistence; habitats; and air, land, and water quality. Consistency requirements applied to a recent Unocal Corporation permit included:

- o Restriction on exploratory drilling below "threshold depth" (i.e., the minimum depth at which oil might be found) until half the migrating whale population has passed the drilling site.
- o Specifications for required site-specific bowhead whale research including hypotheses to be tested, consultation procedures, and reporting requirements
- o Prohibition of "nonessential" boat and barge traffic during whale migration.
- o Requirements for participation in an oil spill response study and technology development effort for broken ice conditions.(Alaska, 1986)

A second set of requirements were applied to an ARCO proposal in the Norton Sound planning area in the Bering Sea:

- o Three personnel fully trained in oil spill response must be on site at all times.
- o Drilling must cease 60 days before expected sea-ice formation, to allow adequate time for relief well drilling in the event of a blow-out.

- o Inter-company agreements and cooperative arrangements must be in place to assure the availability of clean-up equipment.
- o Site-specific oil spill trajectory modeling must be completed (Alaska 1984).

SUMMARY

The Beaufort Sea case illustrates how special features of an ocean region influence OCS decision making. The "endangered" status for bowhead whales has resulted in extensive study and specific protection measures. The fact that the whales are a key subsistence resource for Alaskan natives adds a second set of concerns that have been addressed through mitigation and cooperation.

The issues and mitigating measures for the Beaufort Sea have evolved over a period of 10 to 15 years. Some restrictions are tightened as others are relaxed, each with the benefit of new information about the resources and the potential impacts of OCS activities. State level consistency review allows site-specific attention to resource concerns.

State interests and federal agencies interests are often complementary, as seen in EPA attention to NPDES permit conditions, and in the NMFS role in Section 7 consultation for endangered species.

Finally, the case shows how industry interest tends to dominate the process of area identification. The Barrow deferral was granted at least in part because of low industry interest. The Kaktovik deferral, even with substantial questions remaining about bowhead feeding habitat, was denied because of its greater resource potential.

CONCLUSIONS

The energy development policies of the Department of the Interior and its jurisdiction over OCS leasing dominate the decision arena. There is great discretion in MMS at each stage, and state consistency does not apply at the lease sale stage.

Of the cases reviewed, only Alaska has a state offshore leasing program. The other states show little interest in potential benefits from

offshore development and so are largely reactive to federal policies and the leasing program. Even in Alaska, the State has sued over proposed Sale 92 in Bristol Bay, indicating the continuing potential for controversy. The other states show a range of response to federal policies, including persistent litigation, challenge on scientific merits, and hard bargaining.

OCS decision making involves a significant amount of negotiation and compromise. The character of the negotiations is shaped by several factors, including state policies and attitudes, petroleum resource potential, and the values associated with ocean and coastal resources.

Massachusetts and Florida profess that they do not oppose leasing, so long as environmental understanding is gained and mitigation is performed. Massachusetts, however, has fought each sale in court and has relied heavily on political influence to restrict leasing activity. Florida has opposed leasing in certain areas but has accepted exploratory drilling generally and has worked to develop specific control measures and provisions to generate additional information. In addition, commercial fisheries interests are much higher on Georges Bank than in the Eastern Gulf. And conversely, petroleum resource potential is much higher in the Eastern Gulf than on Georges Bank. MMS has negotiated with Florida, assuring that industry is afforded the opportunity to drill.

North Carolina and Alaska acted differently. North Carolina, after recognizing the potential hazards, secured a MOU to protect nearshore resources and to assure that oil spill trajectories could be predicted adequately. The State has been dissatisfied with MMS response, however, and feels that the terms of its MOU have not been honored.

Alaska has a history of oil and gas development onshore and in state waters, and it conducts an active state leasing program. The State has generally been able to fashion acceptable compromises to protect valued resources, as in the evolution of the seasonal drilling restrictions through successive lease sales. Also, the state relies heavily on its ability to negotiate with industry over permit conditions. In general, significantly more federal agency attention and funding have been devoted to the Alaska OCS program, assuring that leasing moves forward in this area of high resource potential.

Study programs and mitigating measures reflect regional ocean environments and biological resources. Within limits, the decision arena shows responsiveness to regional concerns.

The four cases represent extremely different ocean environments. For each, a particular combination of oceanographic and biological features, as they relate to risks from petroleum development, emerged as critical issues for management attention.

For the highly valued and sensitive Straits of Florida region, Florida achieved a lease cancellation at the 5-Year Program stage. In other areas where resources are more broadly dispersed and where a protective coastal buffer zone is in place, exploration phase surveys are accepted to identify and protect specific valued resources.

Alaska continues to have concerns about whale feeding habitat and about safe operations in the harsh Arctic environment. Lease sale stage deferrals and stipulations are incorporated, but key elements of protection occur through postlease studies, monitoring, and other permit conditions. On Georges Bank, by contrast, ocean gyre currents and the highly valued fisheries resources have stimulated greater opposition to leasing. Monitoring requirements and deferrals were developed for the one sale held on the Bank, but state and federal agencies have called for a more fundamental reconsideration of the cost/benefit analysis on future sales.

Finally, the dominant oceanographic influence of the Gulf Stream has shaped the debate over leasing off North Carolina. A large nearshore buffer zone and improvements to risk assessment capabilities are seen by the State as essential in future sales.

Some management techniques require a 5-10 year period of evolution through successive lease sales.

Alaska and federal resource agencies have been concerned about bowhead whales since leasing began in the Beaufort Sea. Seasonal drilling restrictions were applied in the earliest sale and have been refined over time. Florida's concerns focused on live bottom habitats. The "biological resources" stipulation was refined to apply specifically to live bottoms. Then, additional measures were developed to protect them, such as surveys and discharge controls. The State continues to work with industry and MMS on the most effective specifications for live bottom surveys.

Disagreement persists over the adequacy of resource information to guide OCS decision making. This results from a variety of factors ranging from high technical uncertainty to differences in underlying values.

In each of the cases, the need for additional resource information and risk evaluation figured prominently in the debate over specific OCS decisions. On Georges Bank, the monitoring program during exploratory drilling was a key concession by BLM for Lease Sale 42. Monitoring and other studies have improved understanding of the potential impacts, but they have not improved the climate for reaching consensus on leasing.

Similarly, studies conducted on Gulf Stream effects and whale feeding habitat sought to improve the analytic tools available for balancing risks and potential benefits. The issues for the two regions are similar in complexity and uncertainty. Alaska has a much different attitude toward petroleum development, however, and has been more willing to accept uncertainty than North Carolina.

The states have relied on national level political action to influence OCS leasing decisions.

Congress has been liberal in providing restrictions on Department of the Interior leasing activity. In the case examples, moratorium measures were applied in both the Eastern Gulf and Georges Bank. In the Eastern Gulf, a 3-year program of information gathering was required. In California, Congressional action initiated direct negotiations over lease stipulations and air quality regulations. Political pressure in the mid-Atlantic sparked the establishment of the Oil Spill Risk Assessment Task Force.

The interests and responsibilities of non-MMS federal agencies often coincide with the concerns of states. Thus, the application of environmental laws by these agencies can lead to improved information and management controls.

The Endangered Species Act has the clearest influence where endangered or threatened species occur. Either the U.S. Fish and Wildlife Service or the National Marine Fisheries Service has a specific mandate to evaluate threats to these resources through the preparation of a Biological Opinion. The bowhead whale issue, however, is the only strong example of this additional decision forum in the cases reviewed.

The NPDES program of EPA is a second important avenue by which management attention and informational resources can be broadened. As indicated in Chapter 2, evaluation of drilling discharges under New Source Performance Standards will result in more programmatic attention from EPA. This agency has taken a fairly active role in the Beaufort Sea, Georges Bank, and Eastern Gulf areas.

In addition, Department of Transportation responsibilities, through the U.S. Coast Guard, add safety controls for pipelines and vessel traffic. And Department of Defense interests result in deferrals and stipulations which reduce the area available for leasing and development.

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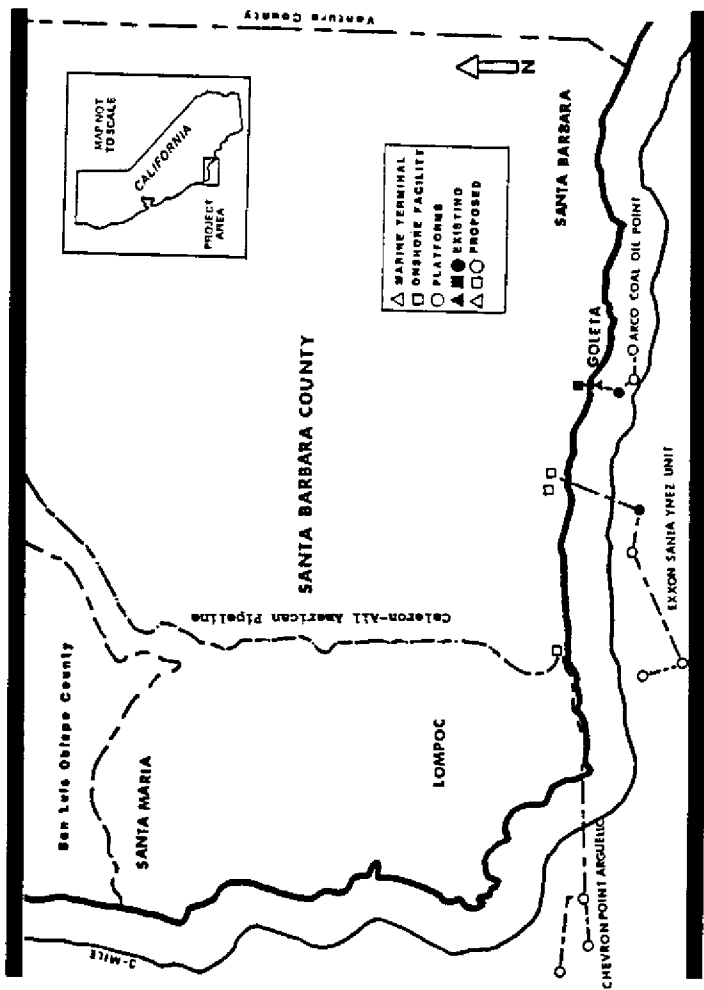
BRINGING OIL ONSHORE

3 CASE STUDIES IN SANTA BARBARA COUNTY

Previous chapters discussed the major steps in OCS oil and gas leasing and permitting through the exploration stage. The purpose of this chapter is to describe and learn from the California experience at the development and production stages of OCS oil and gas projects, when oil and gas is brought onshore for processing. California is selected as the focus for the development and production stage because the California environment is comparable to the Northwest, and it is the only state outside the Gulf of Mexico faced with new OCS production activities. Within California, Santa Barbara County is singled out because it is an example of a local government that has a long history of offshore oil and gas activity. This chapter focuses on three different oil and gas projects in the County during the mid 1970s and 1980s when the County was forced to quickly develop policies and procedures for review and permitting of several large-scale projects.

The three cases were chosen in part because they illustrate different approaches taken by major oil companies (ARCO, Exxon, and Chevron) in developing their leases (see Figure 4.1). Much of the OCS development activity occurs offshore beyond the County's jurisdiction, but many of the impacts affect the adjacent coastal community (Alarcon et al. 1987a). Santa Barbara County tries to maintain maximum control over onshore projects, which ultimately affects how offshore operations are handled. These case studies highlight how a local government can develop a permit process to mitigate local environmental, socioeconomic, and infrastructure impacts and concerns. The case studies further document how intergovernmental relations, corporate personalities, technological choices,

Figure 4.1 Santa Barbara County and Case Studies Area Map.



Source: County of Santa Barbara, Energy Division, 1987.

regulatory options, public participation, global oil markets, and a changing political climate interact to influence the final outcome of an offshore oil and gas project.

THE CALIFORNIA CONTEXT

The earliest drilling rigs in California went up in the 1890s on piers off Summerland in Santa Barbara County. The first offshore platform was erected in 1958 in state waters off Summerland (Almy and Strachan 1987). Since then there has been federal leasing of offshore tracts in each of the California planning areas as well as development of existing leased tracts off Santa Barbara County. Several state and federal lease sales had been held by the time of the 1969 Santa Barbara oil blowout. The oil spill resulted in both federal and state moratoria on development of leases and on further lease sales. The federal moratorium was lifted in 1973, which initiated increased oil production and exploration activities on federal leases in the Santa Barbara Channel and Santa Maria Basin. The state moratorium was also lifted in 1973, but there have been no new platforms installed in state waters since that time.

Since 1969, many Californians have resisted new proposals for offshore oil and gas development activities because they believe this activity would conflict with protection of scenic coastal resources and valued biological populations (Tostevin 1987). Residents fear potential spills and pollution from oil platforms; the 1969 blowout at Santa Barbara is still in their minds. For the most part, local coastal economies are based on agriculture, tourism, and fisheries. Many local citizens believe the potential costs and impacts of OCS development, which are local, outweigh the benefits, which are primarily national (Cicin-Sain 1985).

The oil industry, on the other hand, believes most of the public opposition is because residents want to protect their cherished ocean views, and that protection of the region's biota is a secondary matter. Ironically, as the industry contends, California opposes oil and gas development yet consumes more oil than it produces: it is the third largest gasoline consumer in the entire world, after the rest of the United States and the Soviet Union (Hodel 1987).

Increasingly, public opinion is playing a larger role in governing California's offshore future. Many Californians now oppose further federal OCS lease sales and offshore drilling. Indeed, the 1988 Presidential

candidates' positions on future offshore drilling were a major campaign issue in California.

THE POLICY FRAMEWORK IN SANTA BARBARA COUNTY

Since 1965, more than twenty offshore platforms have been placed in the state and federal waters of Santa Barbara Channel. Santa Barbara County has basic responsibility for siting and regulating onshore and nearshore facilities. Onshore and nearshore facilities require large amounts of coastal land for oil and gas processing plants, onshore pipeline corridors, marine terminals, and other staging components. The County manages these activities through various permits and environmental reviews.

In 1967, the County adopted a "Statement of Policy Relative to the Location of Onshore Facilities," requiring oil and gas facilities to be compatible with recreational and residential uses--"the highest and best use of (coastal) land." This was the County's first policy calling for consolidation of oil and gas facilities at existing sites as opposed to proliferation at separate sites.

The consolidation of onshore and nearshore facilities reflects the County's desire to control development projects to minimize adverse environmental and socioeconomic impacts. The County and its residents are concerned with the "industrialization" of the Santa Barbara coastline. If pipelines, marine terminals, and onshore transport and processing facilities are consolidated, the impact on the environment and other uses is reduced. In addition, the County argues that consolidation of oil and gas facilities would help to retain the visual character of an undeveloped, scenic coastline. Oil companies, however, have generally resisted consolidation because they prefer control over their own individual facilities where they are not subject to rates set by others (Travis 1985).

While there has been consistent oil and gas production since the mid-sixties, the County's current energy production boom began in the early 1980s. Prior to 1980, County policies, basically those of 1967, were adequate for the limited level of oil and gas development occurring in the County. In the 1970s, County staff had begun developing pipeline requirements for transporting oil out of the County rather than relying solely on marine terminals and tanker transportation. The County believed operations associated with marine terminals increased air emissions and

dangers related to potential oil spills. Alternative policy considerations included requiring all oil to be piped out of the County, allowing only one or two consolidated marine terminals, or some combination of both. The other major function of County staff at this time was fighting federal lease sales (Vrat 1988).

In 1979, with Lease Sale 48, major new reserves were discovered. By 1982, the County was overwhelmed by development applications which would result in an eightfold increase in oil and gas production (Alarcon et al. 1987b). The projects under review were of a larger scale and more complicated than those previously administered by the County. To expedite the process, a new Energy Division, funded 100% by fees from industry applicants, was created within the County Resource Management Department to comprehensively plan, process, and permit the oil and gas development proposals.

The new energy division was seen as a temporary "one-stop shop" for energy projects in order to accommodate the boom of project proposals. However, over the years, the energy department has grown (at one time employing more than twenty on its staff) to become a permanent energy planning and management department. Ensuring on-going permit compliance has also become a major activity.

Prior to 1983, federal, state, and local government agencies undertook separate environmental review of oil and gas projects on a project by project basis. The process was fragmented and the goals and interests of the various agencies were often conflicting. In 1983, the first Joint Review Panel (JRP) was established by the County for the Exxon Santa Ynez Unit project to expedite the environmental review process by facilitating communication and interjurisdictional cooperation. The JRP experience is discussed in more detail in Chapter 5.

Despite the creation of the Energy Division and the JRP's, county planning efforts were still under tremendous strain in 1985. Approved projects, if constructed, would increase oil production by 800% and gas production by 4,000%. Throughout 1985, energy division staff pursued development of 14 policy and procedural issues that would determine, for example, liquid natural gas and liquid petroleum gas transport, supply base siting, consolidation policies, and socioeconomic monitoring programs. These 1985 policies, permit conditions, and mitigation programs were developed from the environmental review of up to seven on-going oil and gas projects. Each of the three case studies discussed next were in

different phases of project review at this time and evolved side by side with development of the County's policies.

The oil boom anticipated in 1985 has not materialized. Oil prices fell substantially in the mid-1980s and recovery to former levels is uncertain in the near term. Thus, economic reserves have dropped, resulting in production and drilling cut-backs by the industry. The outcome will be a lower projected peak for the mid-1990s.

Recently, nineteen coastal cities and counties in California have adopted ordinances to protect coastal resources by preventing the siting of oil and gas facilities in their coastal areas. Six other ordinances are pending in the November 1988 election (Haifley 1988). Santa Barbara County is one of the few coastal communities in California that has not enacted the onshore facility ban ordinance. Most California coastal communities perceive Santa Barbara County as "selling out" to the oil companies. But the County has learned that if it does not accommodate oil and gas development onshore, the industry can use offshore processing facilities in federal waters. Indeed, in the Exxon case study, the company took its oil processing operations 3.1 miles offshore to remove itself from the County's jurisdiction. This way Exxon avoided County-imposed air quality conditions on its project.

Thus, the County recognizes that denial of onshore oil and gas facilities could result in entire projects located just offshore, with the potential for greater impacts, and none of the benefits generated by development. The County has countered this by allowing oil reserves to be tapped if it can be done in an environmentally sound manner and with adequate regard for public services, infrastructure and socioeconomic concerns (Almy 1988). This is a result of the long history of oil and gas activities in the County which has provided the opportunity for the community and the oil industry to be educated about the needs of one another.

Table 4.1 Major Required State and Santa Barbara County Permits.

State	
State Lands Commission	Pipeline and Marine Terminal Lease Agreement
California Coastal Commission	Coastal Development Permit
California Coastal Commission	Consistency
Dept. of Fish and Game	Creek Alteration Approval
Dept. of Fish and Game	Blasting Permit
Dept. of Transportation	Hwy 101 Pipeline Crossing Permit
Dept. of Industrial Safety	Trench Permit
Dept. of Parks and Recreation	Temporary Use Permit
Regional Water Quality Control Board	NPDES Permit for Discharges into State Waters
<u>Santa Barbara County</u>	
Air Pollution Control District	Authority to Construct
Air Pollution Control District	Permit to Operate
Board of Supervisors and Planning Commission	Revised Preliminary Development Plan and Rezone
Board of Supervisors and Planning Commission	Final Development Plan Approval
Resource Management Department	Coastal Development Plan Approval
Resource Management Department	Land Use Permit(s)
Dept. of Public Works	Site Work and Building Permits
Dept. of Transportation	Pipeline Road Crossing Permit
Health Department	Domestic Water System Operation Permit

Source: Exxon Company U.S.A., 1987.

CASE STUDIES

The following three Santa Barbara case studies highlight the offshore and onshore permitting process. The cases include ARCO's Coal Oil Point Project, Exxon's Santa Ynez Unit, and Chevron's Point Arguello Project.

The three case studies are quite similar in terms of the permit process, delays encountered, and final conditions required for project approval. Differences between the three case studies center around the techniques for bringing oil onshore, the most controversial environmental issue (ARCO, visual aesthetics; Exxon, air quality; and Chevron, placement of onshore pipelines), the project's timing in light of evolving County policies and the amount of cooperation between the players.

The major issue highlighted in all three case studies is how and where (or if, as in the case of Exxon) each company would bring the oil and gas onshore for processing. The ARCO case study illustrates how interjurisdictional tension can arise between the State Lands Commission and the County over the type of pipeline used for bringing oil from offshore platforms to onshore facilities. The Exxon case study documents the conflict between Exxon and state and local agencies concerning the extent OCS air emissions affect the onshore environment and the authority to regulate air quality. The Exxon example shows how the industry can take a hard-line position in favor of its preferred alternative, impeding the desires of a local agency for consolidation of onshore and nearshore facilities. The Chevron case study focuses primarily on the numerous and innovative permit conditions and mitigation strategies that can be required for bringing oil onshore. As will be seen, each project has undergone years of review by numerous regulatory agencies prior to receiving the required permits for project approval or disapproval (see Table 4.1). These cases are presented in more detail in Appendix C.

The case studies further illustrate that the process for accommodating these types of large scale projects is continually evolving to deal with public concerns, development pressures, and political realities. The petroleum industry considers California the toughest regulatory and permitting environment in the nation (Williams 1987). The stakes are high, the process is politicized, and all the participants are playing hardball.

ARCO'S COAL OIL POINT PROJECT

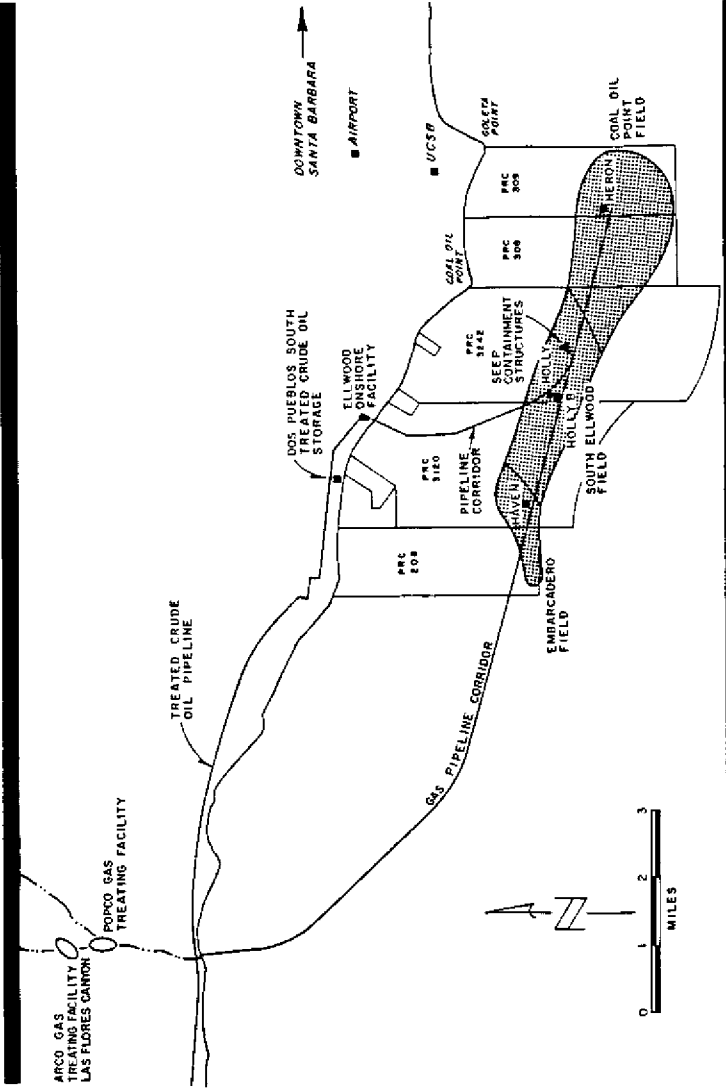
The ARCO case study depicts the convoluted review process an oil and gas development project can undergo. ARCO's proposed project changed considerably from its initial concept for development in 1977 to the time the environmental review was completed in 1987, at a cost of more than \$6 million. ARCO's project differs from the Exxon and Chevron case studies in that the offshore development falls entirely within state waters, while the Exxon and Chevron projects are in federal waters.

ARCO's preferred plan involves installing three new platforms slightly more than two miles offshore from the University of California Santa Barbara (UCSB) campus and the adjacent college community of Isla Vista (see Figure 4.2). The proposed \$400 million project involves five state leases acquired by ARCO in the 1940s and 1960s. ARCO has operated Platform Holly on one of the leases for the past twenty years. Holly was installed prior to the 1969 channel oil spill, as well as before both federal and state environmental quality acts. Thus, the industry sees the Coal Oil Point Project as the test case that could establish the ground rules for further development in state waters. The significance of this is that MMS is not a participant in the development phase of this project. Offshore pipelines fall under the jurisdiction of the State Lands Commission (SLC).

The ARCO project underwent a complete metamorphosis during its application process, mitigating concerns of both the County and the SLC. This included ARCO withdrawing and re-submitting its application twice to redesign the project to conform with proposed and existing county policies requiring consolidation of facilities. Many of the changes to the project relate to expanded onshore oil operations to serve the proposed platforms, including a consolidated gas processing site in common with Exxon at Las Flores Canyon and other shared pipeline capabilities. The key to many of the project's proposed alternatives is the type and placement of pipelines.

ARCO was also caught in the middle of a disagreement between the County and the SLC as to whether production from several platforms should be commingled into a single pipeline. Commingling of oil into consolidated pipelines affects the metering of the oil for royalty revenue purposes. Commingled pipelines would promote the County's goal of reducing the number of pipelines but increases the possibility that the SLC would not receive its proper royalties.

Figure 4.2 ARCO's Coal Oil Point Project.



Source: ARCO, 1986.

Much of the contention with the County exists because the SLC wears two hats. It works closely with the industry in pursuing offshore oil development so the state can receive royalties from its tidelands. It is also the regulator of submerged lands. Early in the process, the County perceived the SLC as having a pro-industry bias. The question over commingling was a dominant issue for the JRP. The County was concerned with land uses and the role of its consolidation policy, while the SLC was concerned with ensuring maximum state royalties from development and avoiding a potential "cap on production" that could result from consolidation of facilities.

The ARCO project went through a tortuous four and one-half years of environmental review, examining the potential risks of oil spills to UCSB marine research, tourism, the fishing industry, possible releases of toxic sour gas, and discharges of drilling muds and cuttings. Throughout the process, the SLC and the County encouraged ARCO to meet their conditions and concerns in order to receive final approval of the project.

However, in the closing months of the environmental review process, the political balance of the SLC changed with the addition of Commissioner Gray Davis, a strong environmentalist. This coincided with mounting local opposition, mainly from UCSB and the surrounding campus community of Isla Vista, over the proposed placement of Platform Heron, directly offshore from UCSB. ARCO refused to eliminate or relocate Platform Heron on the grounds it would make the entire project economically infeasible. While impacts to the marine environment were strongly argued, it was apparent the overriding reason for the massive public opposition was Heron's proximity to UCSB and the project's overall visual degradation of the area (State Lands Commission 1987).

In a surprising decision, after numerous public hearings and the final approval of the EIR/EIS, the SLC voted to deny the project. The SLC staff report recommending denial was largely based on overwhelming public opposition to the project's visual impacts. Commissioner Davis was also concerned about the potential cumulative effects of state/federal oil and gas development in the Santa Barbara area and called for new studies before any more projects would be allowed in state waters. Further, the SLC commissioners determined that denial of the project would preserve the leases in their present condition, which is an appropriate use of the public trust property.

ARCO has filed suit asking the court to approve its Coal Oil Point Project or require the SLC and County pay damages of \$760 million. ARCO believes it has a reasonable expectation to develop its leases. ARCO submitted heated testimony at the final hearing, concluding that "from the analysis of the issues of aesthetics in the staff report, it is possible to conclude that the history of the Coal Oil Point Project has been one of years of dialogue, engineering design, and environmental review to enable you to reach the decision that offshore platforms are unattractive" (ARCO 1987). It is uncertain at this time what effect the lawsuit will have on future development of the Coal Oil Point fields. It is possible this suit may become a landmark case if appealed to the U.S. Supreme Court.

The California Comprehensive Offshore Resource Study (CCORS) proposed by the SLC commissioners (in conjunction with the ARCO denial) was initially conceptualized to assess the cumulative effects of all oil and gas development in both federal and state waters off the coast of California. It has been suggested that the study was a political move to support the denial of the Coal Oil Point Project. Initial requests by the SLC for funding the study have been denied by the Governor. Due to the politics of the situation, the likely product resulting from the study will be a computer-based inventory of the best information available on a region by region basis.

EXXON'S SANTA YNEZ UNIT

Exxon acquired leases for the Santa Ynez Unit (SYU) in 1968 and discovered oil a short time later in the Hondo field. In the following twenty years, the project went through two production and development plans, four major environmental impact studies, countless public hearings, at least ten lawsuits and appeals, and one Santa Barbara County-wide referendum. If nothing else, the permitting process was a learning experience for both the County and Exxon, and significant progress was made in planning for air quality concerns.

Exxon's development and production plans for the SYU contained both onshore and offshore options. The *onshore option* included construction of onshore oil processing and storage facilities at Las Flores Canyon, and operation (later construction) of a nearshore marine terminal. The *offshore option* included installing (and later expanding) a permanent, floating offshore storage and treatment (OS & T) facility in federal waters. Exxon used the offshore option as a contingency plan to insulate it from

state and local requirements to which it might object. Initially, Exxon proposed to install one drilling and production platform, and later, once it had learned from the experience of drilling in the deep water of the Channel, to install three or four new platforms to develop the unit (see Figure 4.3).

Early in the game, Exxon had taken the lead in controlling the permitting process. Exxon's staff was more highly skilled and technically trained than the County's staff. Soon there was controversy and conflict among county, state, and federal agencies and the applicant, Exxon. A major issue concerned who had jurisdiction over OCS air emissions and the resulting potential impacts on coastal environments and other shoreline development. As seen earlier, the County was concerned both with the impacts onshore facilities would have on the coastal landscape and with emissions from onshore and offshore operations. The MMS took the position that OCS emissions had little or no effect on coastal air quality. It was this issue that would plague the development of the SYU.

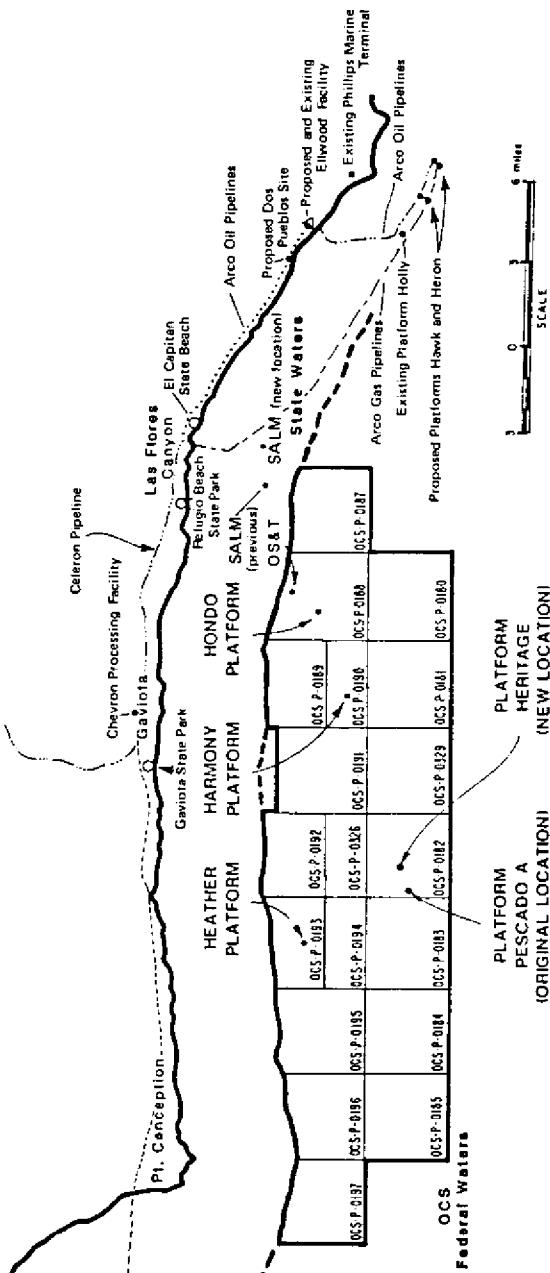
At the time of Exxon's original application in 1971, the County was studying alternative ways of transporting oil out of the County (pipelines vs. tankers), and was looking at the feasibility of consolidating onshore storage and processing facilities. The results of the studies were not available until the project review process was underway. At public hearings, local interest groups voiced their concern that county policies based on the studies might be formed too late to alter the project.

The County, however, went ahead with approval of the onshore option in February 1975. Basically, the County was concerned that if it did not give approval, Exxon would proceed with its offshore plans. This would remove the project from the County's jurisdiction. During state level review with the State Coastal Commission (later the California Coastal Commission), conditions were attached to the project requiring Exxon to study the feasibility of piping their crude oil out of the County. Pipelines are seen as a way to reduce air emissions and reduce the danger of oil spills, concerns of both the local interest groups and the State Coastal Commission. This condition was not acceptable to Exxon, who, with Department of the Interior (DOI) approval, proceeded with its offshore plans. Production from the first platform (Hondo) began April 2, 1981.

Exxon challenged local authority once again when it submitted revised plans in 1982 to build onshore processing and storage facilities at Las Flores Canyon, develop a new marine terminal, and install three to

Figure 4.3 Exxon's Santa Ynez Unit.

LOCATION OF EXXON SYU PROJECT COMPONENTS AND REGIONAL OIL-RELATED DEVELOPMENT



Source: Arthur D. Little, 1986.

four new platforms. Once more, Exxon had a fallback plan to expand the OS & T vessel if permit approval was too burdensome. The County assumed that it had authority to prohibit construction of onshore facilities which, in combination with OCS sources, would exceed air quality limits. Exxon maintained that federal mitigation measures were sufficient to control OCS emissions. The County and Exxon grappled with the question of the extent that OCS emissions affected the onshore environment and the limits of the County to regulate these impacts (Callahan et al. 1987b).

When the County imposed conditions or made requests for Exxon to mitigate air quality impacts from the total project, Exxon brought legal action against the County (Fleisher 1987). Ultimately, these adversarial tactics delayed project approval for three years and increased costs for Exxon. The final project had more than 160 permit conditions, almost 100 more than the project had as first approved by the County and the California Coastal Commission. The most controversial conditions specifically addressed air quality concerns (although one to which Exxon particularly objected was deleted).

The JRP for this project was not successful in resolving these interjurisdictional air quality disputes. California has had a continuing long standing legal battle with the Department of the Interior (DOI) over interpretation of the California Coastal Commission's consistency review authority granted under the CZMA. In April 1985, California suggested a negotiated rule-making process using an independent mediator to resolve differences between California and the DOI (Kahoe 1987). These negotiations are still in progress.

Project impacts were reduced by County requirements for mitigation programs such as the Socioeconomic Monitoring and Mitigation Program and the Local Fishermen's Contingency Fund (the programs are discussed after the case studies below). These programs were designed to address specific concerns that arose during project review at the County level and have become standards used in other projects. The Exxon project has received all the permits necessary for construction to begin in Las Flores Canyon, and groundbreaking ceremonies were held on April 15, 1988.

CHEVRON'S POINT ARGUELLO PROJECT

In May of 1981, Chevron and its partner Texaco paid the highest bid ever, a staggering \$333 million, for a single OCS tract in the Point Arguello Field during Lease Sale 53. One year later, Chevron made public its "giant" discovery in the Santa Maria Basin, the largest domestic find since Alaska's Prudhoe Bay. Chevron estimated the Point Arguello reservoir could yield as much as 500 million barrels of oil and 200 billion cubic feet of natural gas.

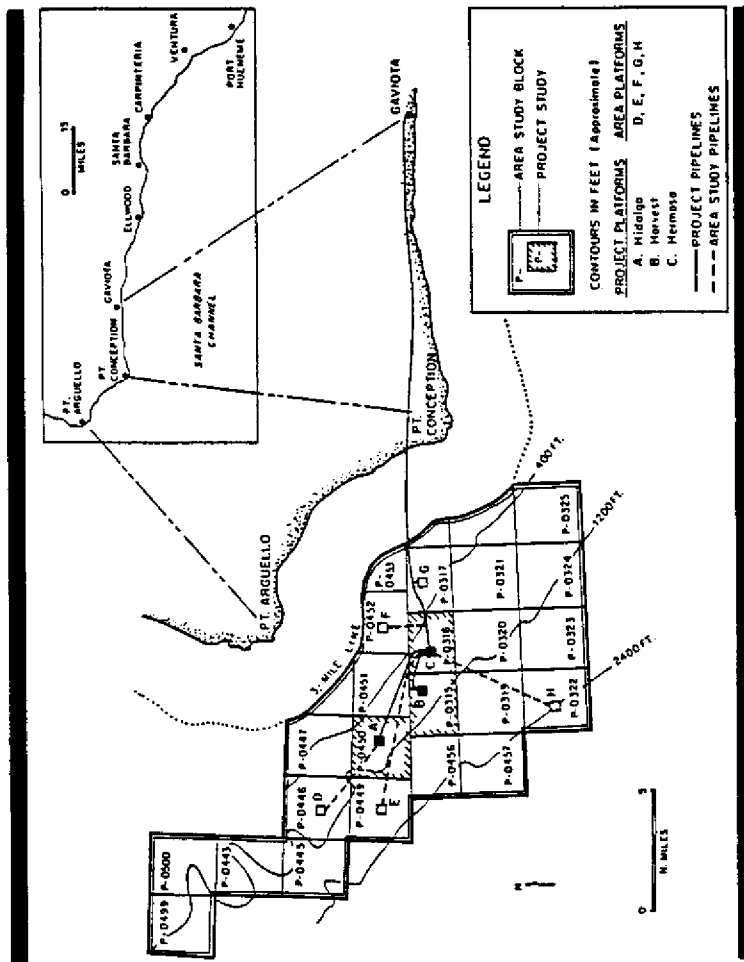
The initial phase of Chevron's Point Arguello Project was influenced by MMS and the concept of "area studies." Chevron's Point Arguello project is the first OCS project to utilize the concept. Area studies were initiated by MMS in March 1983 so that onshore and offshore components for the project could be designed to consider the potential total build-out for the entire basin. This would also address cumulative impacts of future development and be more consistent with state and local policies in regard to consolidation of onshore and nearshore facilities (Kahoe 1987). The MMS area study required that the first applicant (Chevron and its partners) provide enough capacity to accommodate others at the consolidation site approved by the County. The long-range consolidated design called for capacity large enough to support up to eight platforms based on the potential for future development (Dunaway 1988).

By 1984, Chevron's Point Arguello Project proposed three new platforms, offshore pipelines to transport the oil and gas onshore, and a processing facility (see Figure 4.4). The offshore pipelines gather all production at Platform Hermosa, and pipe it 27 miles to the new \$280 million consolidated Gaviota Oil and Gas Processing Plant. As with all three case studies, a major issue was how to get the oil and gas onshore for processing.

A major change in the project plan occurred when the California Coastal Commission required the pipelines to be routed onshore from Point Conception to Gaviota. This shift from the proposed offshore to an onshore pipeline route raised several controversial issues. This also resulted in the County developing specific permit conditions and mitigation measures to reduce impacts from the onshore pipelines (one oil and one gas).

One issue involved native American concerns and a private landowner's objection to the proposed onshore pipeline route. In the case

Figure 4.4 Chevron's Point Arguello Project.



Source: Arthur D. Little, 1984.

of the native American claims, the County developed the Cultural Resource Monitoring Plan to safeguard archaeological resources. The plan allows native Americans to oversee the pipelaying to ensure that any cultural resources identified would be avoided during construction activities.

The landowners objected to the proposed onshore pipeline route and a condition requiring Chevron to provide public access to the coast. The landowners were concerned that public access would adversely impact this relatively untouched strip of coastline, and concerned with the potential for oil spills and toxic vapors escaping from pipelines. After several hearings, the County amended its Local Coastal Plan, authorizing the California Coastal Conservancy to work out an agreement with the landowners for public access to the coast.

Concern over the safety of the Gaviota processing facility also resulted in permit conditions such as the requirements for Chevron to fund the construction of a school which had to be relocated. The estimated costs of constructing the school and relocating the students is \$250,000 per student. In addition, Chevron built new fire stations costing about \$5 million. A \$12 million desalination plant was built to reduce demand on local water supplies and to enhance the County's infrastructure (True 1988).

Chevron was also the first in the industry to reach several agreements with the County concerning Best Available Control Technology (BACT) standards for air quality. One BACT measure adopted is the Chevron-funded offshore Turbine Generator Nitrogen Oxide Reduction Technology Development Program, which provides offshore emission controls and monitoring. If successful, this may become standard operating technology for all OCS projects. Chevron was also willing to make substantial concessions to the County over air quality concerns. It met requirements to offset all emissions at a ratio of 3:1 since the County was not meeting its Air Quality Attainment Plan.

All of these mitigation measures show the extent to which Chevron cooperated with expensive project-specific County permit conditions. The County believes these measures are necessary to fully account for socioeconomic and infrastructure costs within their jurisdiction. But of the \$2 billion in total project costs, Chevron attributes \$86 million to satisfying mitigation requirements.

The Federal role in permitting the offshore component of the project was also innovative. MMS, the lead federal agency in the JRP, required a new Anchor Mitigation Plan to minimize damage to fisheries and the seafloor by careful placement of anchors during construction of the project. Commercial fishermen, however, were concerned that development would still result in a substantial loss of fishing grounds and gear regardless of the plan. This conflict was resolved by compensating fishermen according to the guidelines of the Local Fishermen's Contingency Fund.

The major stumbling block delaying plant "start-up" is new information that hydrogen sulfide (H_2S) levels in the natural gas, which is transported via onshore pipelines, could be substantially higher than originally documented. Adjacent landowners are concerned about the potential for leaks in the pipelines. The County requested that a Supplementary Environmental Impact Statement (SEIR) be prepared to assess the potential risks of increased levels of H_2S . Several public meetings have been held and the County and Chevron are close to resolving this issue.

Although the Point Arguello Project met several major stumbling blocks during its six-year permitting process, this venture broke new ground in the use of innovative technology and permitting strategies. Many believe Chevron "bent over backwards" to comply with County permit conditions. Nonetheless, Chevron and the County have developed a good working relationship which is not typical of many OCS projects (Lagerquist 1988). While the permitting process has been more streamlined than the other two case studies, it has taken Chevron 18 months longer than anticipated to complete construction and satisfy the County's permit conditions. And there is still potential for additional delays before start-up.

The County maintains that in many cases Chevron has not efficiently complied with all of its permit conditions. County officials cite infractions by Chevron-employed contractors during onshore pipeline construction. Local citizens also point out that the landscaping plans described in the EIR/EIS to screen the Gaviota processing plant from view have not been complied with. To avoid future problems such as these, the County Board of Supervisors approved the formation of an interdepartmental Permit Compliance Program in September of 1986 to ensure coordinated monitoring and compliance for *all* County conditions.

More than 160 permit conditions were imposed by the County. The Chevron case study illustrates how the County re-worked its permitting strategy on a project-specific and site-specific basis to respond to various potential impacts. While the offshore construction and installation phase went rather smoothly, during the onshore phase Chevron was forced to conform to an evolving County permitting and compliance strategy which was not clearly articulated in the early stages of the project. What has been described as a "frustrating" experience for Chevron, however, has ultimately resulted in a more comprehensive and sophisticated, though still evolving, County permitting strategy for OCS development.

PERMIT CONDITIONS AND MITIGATION PROGRAMS

The environmental impact reports for all three case studies found that the County's coastal resources will be adversely affected by the impacts of cumulative offshore oil and gas developments. In response to these impacts, the County has developed permit conditions and various mitigation programs which are requirements of each County-approved oil and gas development (Callahan et al. 1987b).

Figure 4.5 illustrates the development of County policies and mitigation programs in conjunction with permitting of (but not limited to) the ARCO, Exxon and Chevron projects. With each project the County has reviewed, the permit conditions have become more sophisticated. As Energy Division Director Rob Almy points out, "Permit conditions are a reflection of what we've learned" (Almy 1988).

Permit conditions and mitigation programs offer the County a way to reduce impacts and receive compensation for unavoidable impacts. This compensation is necessary since direct payments for leases and royalties from oil production go to federal and state governments. From the County's perspective, permit conditions (such as Chevron's and Exxon's) offer the most protection the County can legally obtain.

The County has developed many innovative permit conditions and mitigation programs, four of which are worth special mention. First, the Environmental Quality Assurance Program was developed during Chevron's environmental review process. The County determined it needed full-time on-site staff to monitor compliance with complex project conditions during construction (Cantle et al. 1987). The industry pays all

costs for county monitoring and enforcement activities. The County believes permit conditions are "toothless" without proper monitoring and enforcement (Cattle et al. 1987), and monitoring by the Energy Division staff has become one of its primary activities.

Second, the County established the Coastal Resources Enhancement Fund (County of Santa Barbara 1988a). This fund is designed to reduce residual or cumulative impacts which cannot be mitigated by a project specific measure. The Chevron and Exxon projects (the ARCO project has not been approved by the County) are required to contribute a total of \$2.235 million and \$1.2 million, respectively, to the program over a five-year period. This program helps fund capital improvement projects that promote or improve coastal land preservation and public use, habitat restoration and protection, tourism and recreation, or coastal quality of life. For example, many of the projects use matching funds for county park expansions, acquisition of open space, wetlands protection, wildlife refuges, or educational and recreational opportunities.

Third, the Socioeconomic Monitoring and Mitigation Program (SEMP) ensures that oil companies pay for public services or infrastructure resulting from any new oil and gas development (County of Santa Barbara 1988b). Existing taxpayers are then not required to subsidize these new services. SEMP is based on a consensus agreement between the County and the oil companies on the best way to assess socioeconomic impacts of new projects. For example, during 1986-87, the SEMP model calculated a population increase of 1,544 people resulting from the Chevron Point Arguello project. This increase then formed the basis for mitigation programs related to public services, infrastructure, and housing needs. The County believes SEMP will also be an effective tool in forecasting population impacts from future oil and gas projects, and thus will aid the County in preparing for long-term growth.

Fourth, the Local Fishermen's Contingency Fund (LFCF) was established to bridge the gap between the federal fishermen's contingency program and the needs of the local fishermen. The LFCF has sought to reduce conflicts between fishermen and oil operators, in particular when crew and supply boats disturbed or damaged crab pots. This issue was resolved by mapping lanes for vessel transit. The LFCF is discussed in greater detail in Chapter 5.

Figure 4.5 Case Studies and Santa Barbara County Timeline.

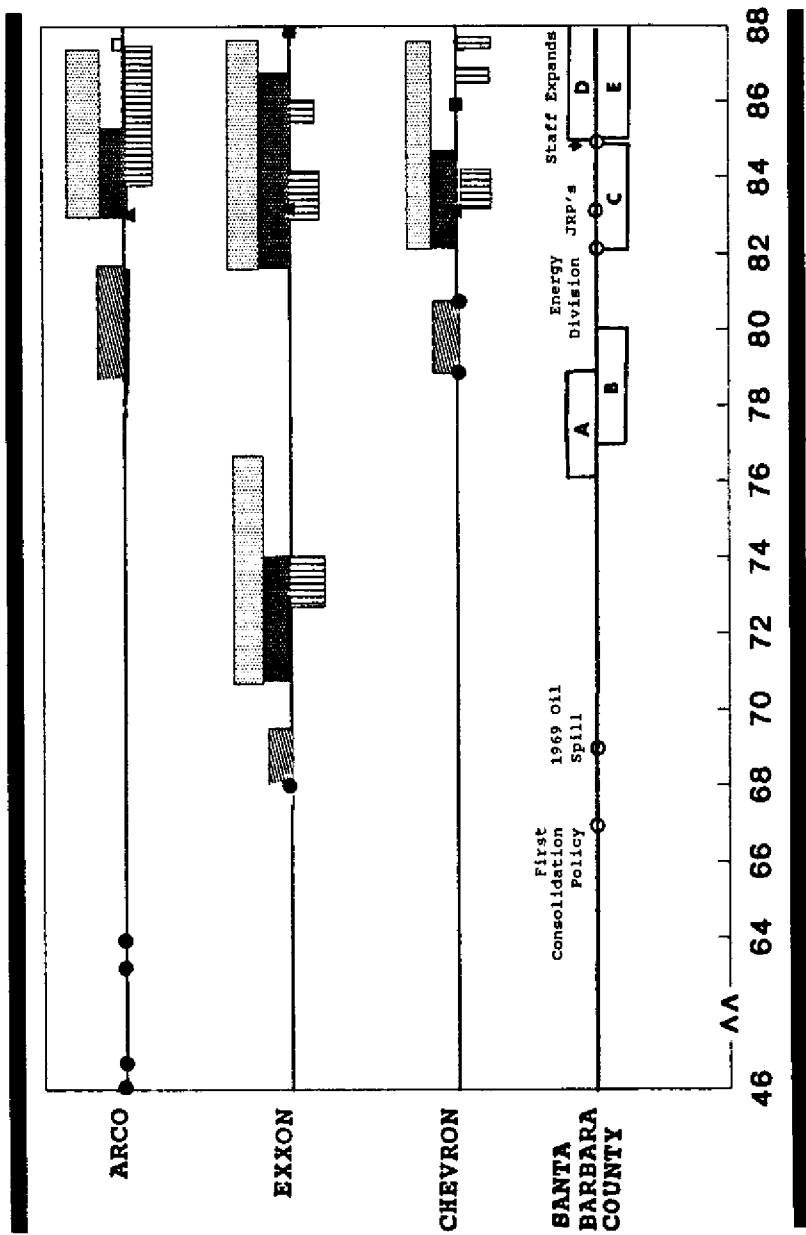


Figure 4.5 Legend

Case Study Key

- Lease Sale
- ▨ Exploration/Discovery
- ▲ Joint Review Panels
- ▩ Development Plans Submitted/Approved
- ▧ Environmental Review
- ▤ Internal County Review
- Project Denial
- Construction Begins

Santa Barbara County Key

- A County actively fights lease sales.
- B First policies favoring onshore pipelines and consolidating marine terminals
- C County creates Energy Division to review and permit six major proposed development projects.
- D Up to seven major projects under review. Energy Division staff expands to keep up with development applications.
- E Fourteen oil and gas policies under development. Mitigation programs evolving in response to environmental review of on-going projects.

CONCLUSIONS

County policies and the development of oil and gas projects have evolved together.

In the early 1980s, the County had inadequate information on the onshore socioeconomic and environmental impacts of OCS development, and few policies that addressed oil transportation and consolidation of facilities. As was seen in all three case studies, consolidation and co-location of onshore processing facilities was a major goal of the County to counteract the impacts of large-scale projects on the coastline. The County initiated studies (some of which were funded by the oil companies) to gather the needed information for policy formation at the same time project applications were being reviewed. This increased the potential for confrontation and delay. As the County gained experience from the environmental review of each project, it was able to apply what it learned to new project proposals. The policy framework has matured considerably, as has the information base for analysis of new projects.

County staffing needs were defined more clearly as experience with project review progressed.

From the outset, the County realized it was necessary to have a trained and sophisticated staff capable of negotiating with MMS, the state, and the industry, and coordinating project review with other agencies. The staff has grown from two full time energy specialists to as many as 24, expanding and contracting with its work load. Currently, the Energy Division employs seventeen specialists and is presently recruiting others.

Industry is required to pay a substantial part of the costs of permit processing and mitigation programs administered by the County.

The industry is usually willing to mitigate impacts or spend money upfront on new studies if the requests are made early in the process. However, as seen in the denial of the ARCO project (ARCO paid close to \$5 million for studies during the review process), industry clearly needs a reasonable expectation of project approval before large sums will be spent.

The JRP has fostered interagency communication and information sharing at early stages of the process.

JRP's were used for each case study and their effectiveness has increased with experience. The Exxon SYU project was the first JRP where members were limited to the major permitting agencies. The JRP was not wholly successful because it did not resolve interjurisdictional problems over air quality concerns. However, participating agencies felt it was a good first step in working towards reducing overlapping studies and minimizing potential conflicts.

The JRP for the ARCO Coal Oil Point Project, unlike the other two case studies, had the SLC (and not the county) as the state lead agency. The JRP sorted out tremendous amounts of information needed for resolving technical issues. Moreover, the JRP matured throughout project review and was largely successful since it helped mediate differences between the SLC and the county over the issue of commingling of oil. It also provided an avenue for UCSB to play an important role in the process.

By the time of the large and complex Chevron project, the JRP process was more familiar to the parties and the process worked more smoothly. Mary Elaine Dunaway (1988), MMS Environmental Coordinator for the Chevron JRP, suggests that the JRP works best when the state lead agency is the county while the federal lead agency is MMS and that JRP's are too cumbersome when more than five agencies are involved since full consensus is not achieved as often.

Area studies provide essential information for onshore planning.

In both the Exxon and ARCO case studies, the County did not have sufficient information to make informed decisions regarding the design and location of subsequent consolidated or co-located facilities that may be needed in the future. In response to these and other concerns, area studies were initiated by MMS as described in the Chevron case study. Such studies provide a reasonable projection of total buildout needed to develop an oil and gas field. Thus, better information about future activities is available earlier in the process so that onshore permitting can proceed with greater certainty.

Good relations between the industry and the County are important.

The approach to the permitting process varied considerably from company to company. Exxon took a hard-line approach to air quality conditions imposed, while Chevron was quite amenable to providing "extras" to avoid confrontation. ARCO, on the other hand, maintained its "good neighbor" status--until problems developed with UCSB. The Exxon project is the only case study now fully permitted, while Chevron is being held up on a few permit conditions that they have not fulfilled. Nonetheless, both the County and the industry are now more sensitive to the needs of one another and cooperation between the two is on the upswing.

County policies have evolved incrementally and are slowly becoming standardized.

Project review today relies more on pre-established sets of responses than on ad hoc analysis for each application. Permit conditions incorporate performance standards and require best available control technology. Monitoring for compliance is done through the Environmental Quality Assurance Program and the Permit Compliance Program. Mitigation requirements are established more scientifically and mitigation funds are distributed through prescribed programs. This gradual "institutionalization" of the review process gives applicants early warning of project conditions and costs and increases their willingness to participate. It also makes the process more complex and at times difficult to understand and follow. While the County has made some mistakes, it is becoming more sophisticated in its policies and procedures.

Longer-range planning is beginning to emerge.

Federal and state permitting for oil and gas development, though primarily done case by case, is beginning to rely on a broader base of information. Area studies try to forecast future development scenarios. The new CCORS study (initiated by the SLC after the ARCO denial) attempts to inventory existing sources of information and assess regional impacts of both federal and state projects. Further, County mitigation programs are now seeking to anticipate cumulative impacts and address them in a systematic way. All of these strategies broaden the information base on which project-level decisions are made and provide the County with a stronger foundation on which to build its management program.

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5

Organizing for OCS Participation

Planning for OCS leasing requires an increasing amount of specific information on which to base state responses and input to the federal process. Chapters 2 and 3 identified the most important points of access to federal decisions and the kind of information frequently offered by state and local interests. Planning for OCS activity also requires information for state and local decision-making, particularly at the exploration and production stages, as shown in the case studies in Chapter 4.

Many organizations and individuals are involved in developing and using this information. State agencies concerned with fisheries, wildlife, submerged lands, local affairs, economic development, water quality, and safety must be involved. Local input is needed from cities, counties, port districts, tribal governments and other special districts. Private interests such as oil and gas companies, fishermen, tourism and recreational interests, environmentalists, community organizations, and the general public must be represented. Finally, independent experts in a wide range of disciplines will be needed: geology, biology, planning, water quality, Indian law, etc. Thus, some sort of continuing process for receiving, organizing, and using this information in prelease, leasing, exploration, development, and production stages may be necessary.

States and regions of the country have had to address the question of organizational arrangements for OCS analysis and decision making. The purpose of this chapter is to describe four such arrangements. The four case studies were chosen because they are diverse, address different stages of the OCS process, and have been noted by some authorities as relatively successful. These are not proposed as models but as examples to help inform the dialogue on organizational arrangements.

CASES REVIEWED

First, Florida's OCS coordination and policy development function is an example of a highly focused approach to OCS planning. It is located in the environmental policy unit of the governor's office. Florida has been particularly active in the five-year plan, prelease, lease and exploratory drilling phases of OCS development.

Second, Alaska's "project consistency" regulations establish a coordinated and expedited process for determining if development projects are consistent with Alaska's Coastal Management Program. Under the process, a single and unified state consistency position is prepared for each development project requiring federal or state permits.

Third, California uses the California Environmental Quality Act (CEQA) in combination with the federal National Environmental Policy Act (NEPA) to create Joint Review Panels (JRP). These panels, made up of the lead federal, state, and local agencies, address complex OCS-related development and production projects and oversee the preparation of a Joint EIS/EIR that evaluates alternatives, cumulative effects, and mitigation measures. This joint process is especially useful at the production stage of oil and gas development when local interests and responsibilities are highest.

Fourth, in the private sector, significant efforts have been made by the California Coastal Operators Group, representing the oil industry, and local fishermen's organizations to reduce the level of conflict between the two industries. A Joint Oil/Fisheries Committee with equal membership from each industry serves as a forum for negotiations. This direct industry-to-industry arrangement receives advice from the California Sea Grant Marine Advisor and assistance from a professional mediator.

FLORIDA'S ENVIRONMENTAL POLICY UNIT

Florida's consolidated approach to OCS planning has its roots in the OCSLA Amendments of 1978. Under that Act the Secretary of Interior must provide opportunities for state and local government to participate in decision making at the program planning, leasing, exploration, and production stages of OCS development. The Act calls for

the Secretary of Interior to consult with the governor of a state and consider his/her views at a number of stages in the process. For example, consultation with the governor is required during the preparation of the 5-year leasing schedule, prior to holding a particular lease sale, and in response to exploration, development, and production plans (See Chapter 1). Virtually all governors respond energetically and seek to influence Secretarial decision making, but the way in which they use their office and state and local agencies to prepare this response varies widely.

Oregon and Washington governors have relied for the most part on the assistance of their line agencies responsible for CZM, and the OCS Coordinator in those line agencies. A contrasting example is Florida, where virtually all aspects of OCS are managed within the environmental policy unit of the Office of Planning and Budgeting (OPB), which is part of the executive office of the Governor.

Florida has been consolidating OCS functions into the Governor's office since 1982. A study by Lind Deller Co. in 1982, titled "Analysis and Options for Florida's OCS Decision-Making Process," recommended that OPB retain the OCS functions it had at that time and that three other responsibilities be consolidated in that office. Each recommendation has been implemented.

First, they proposed that financial and technical assistance to local governments for participation in OCS issues be consolidated under OPB. This function had been done by the Office of Federal Coastal Programs in the Department of Community Affairs. The reasons cited for this change were avoiding duplication, increasing efficiency, and providing local governments with just one state-level agency with which to deal.

Second, they recommended that the OCSLA consultation process and the federal Coastal Zone Management Act (CZMA) consistency reviews for OCS decisions be consolidated as well. The normal location in state government for federal consistency review under the CZMA is with the agency responsible for the state's CZM program -- in Florida's case, the Department of Environmental Regulation (DER). However, the consultants argued that consolidation in OPB would avoid potential contradictions between OCSLA "consultation" and CZMA "consistency" reviews with regard to lease sales and exploration projects, respectively. This recommendation has been implemented only partially. By agreement between OPB and DER, the OPB seeks out and consolidates the

consistency comments from many agencies, but the formal consistency letter is sent by DER (Hoehn 1988; Memorandum of Agreement 1984).

Third, the consultants recommended that the state's official representative to the National OCS Advisory Board's Policy Committee be a high-ranking state official, rather than an outside consultant-expert as had been the case for many years. They argued that the authority of the Governor's OCS advisor, in the eyes of the Secretary of Interior and other states, should be solidified by having that person come from within the administration.

There are underlying reasons that help explain the consolidation of OCS functions in the Governor's office in Florida. The governor is designated by state law as the state's chief planning officer, and his office is responsible for coordinating state planning with federal and local agencies. His office also acts as the state clearinghouse for federal project reviews. Also, there was a history of OCS coordination and staff expertise in the Governor's office that pre-dated the emergence of the Florida CZM program (FCZMP). One of the options available to the state would have been to shift OCS responsibilities to the new FCZMP. The state decided to build on what already existed rather than shift responsibilities. Further, the FCZMP is a networked CZM program where coordination among existing line agencies is crucial. The Governor's office already had a coordination vehicle for OCS-related activities and common sense suggested that the job could continue to be done at that level. Next, the federal-state policy issues involved in OCS development are substantially different from the state-local CZM issues of wetlands protection, dredge and fill, beach access, etc. OCS policy issues require the personal attention of the Governor. Other CZM issues could be handled by the technically qualified experts within DER. Finally, it should be noted that the head of the DER is appointed by the Governor. Thus, the link between DER and the Governor's office is stronger than it would be with an agency with an independently elected director or commissioner, as is the case with many of the cabinet-level agencies. This close political tie makes it easier for OPB and DER to coordinate views on federal consistency determinations.

The OCS activity within the environmental policy unit is run by two full-time persons. They work closely with people in DER and other agencies. Tucker (1988) estimates the total OCS effort to be between four and five full-time persons and worth about \$200,000 per year. It is the largest of the many coordinating functions carried out within the environmental policy unit. Although originally funded with CZM grants,

the positions are now supported by state funds. The office handles all aspects of OCS decision making: defining and protecting state interests in the MMS 5-Year Lease Planning process; developing and negotiating measures for each proposed lease sale; preparing consistency reviews for exploratory drilling permits and other federal permits; monitoring OCS-related activities such as industry trends and exploration results; and representing the state on the national OCS advisory board and its regional technical working groups. Oil and gas activities occurring within state jurisdiction would be reviewed by a number of specific agencies dealing with land use, water quality, fish and wildlife effects, etc.

To achieve these reviews, the OPB coordinates and seeks advice from a wide array of people. OPB chairs an OCS advisory committee made up of agency, industry, environmental, and local government representatives. The committee meets as needed, usually three or four times per year, to review technical and policy matters. The advisory committee members are points of contact for their agency or group, often sought out for specific information or policy guidance by their agency.

OPB seeks out advice and comment from local governments by working with county contacts as well as regional planning councils. On particular issues OPB solicits input from locals or asks for review of EIS's. OPB seeks to incorporate the views of local government and other state agencies in its formal responses to MMS.

As state clearinghouse for federal project requests, OPB acts as coordinator for federal consistency reviews. When they receive, for example, a plan of exploration (POE) for review under the OCSLA and CZMA, the plan of exploration gets circulated to all interested state agencies, local governments, planning councils, etc. OPB will then consider and combine these comments and others into a single draft response which is circulated back to the responsible agencies for review and comment. DER, the official CZM agency for the state, issues the final comment letter when a federal consistency review under the CZMA is involved.

OPB has been quite effective in achieving the Governor's objectives with MMS and the oil industry. They have routinely required oil spill trajectory modeling and live bottom surveys to be done on site before exploratory drilling takes place (See Chapter 3). In recent negotiations with MMS, Lease Sale 140 (Straits of Florida) was cancelled and leasing was temporarily deferred in the SW Florida shelf and Apalachicola areas.

These results can be attributed both to political skills as well as technical competence. The location of the OCS technical office within the Governor's office facilitates these actions.

ALASKA'S CONSISTENCY REVIEW PROCEDURES

The Federal Coastal Zone Management Act of 1972 places an additional regulatory responsibility on projects affecting states with approved coastal management programs. Under Section 307 of the Act a federal project, or federally permitted project, must be consistent with the federally approved coastal management program in that state. These additional responsibilities are called the "federal consistency" requirements, and they are an important tool for states seeking to guide OCS exploration and development. Alaska has promulgated special regulations that build upon the federal consistency requirements and constitute a primary coordination process among state and local agencies.

Consistency requirements apply to federal activities and projects which "directly affect" the coastal zone of a state; to federal licenses and permits for activities affecting land or water use in the coastal zone; to plans for exploration, or development and production plans for oil and gas from the outer continental shelf; and to federal grants to state and local activities affecting the coastal zone.

In some cases federal agencies need only be consistent "to the maximum extent practicable," and the determination whether a project is consistent is made by the federal agency. In other cases consistency determinations are made at the state level, but an appeal to the Secretary of Commerce is permitted as an administrative check on state decision making. There have been many court cases and considerable controversy over the proper interpretations of the scope of federal consistency responsibilities. In 1984, for example, the United States Supreme Court ruled in *Secretary of the Interior v. California*, 464 U.S. 312, that lease sales were not subject to federal consistency requirements because the lease sale itself did not directly affect the coastal zone of a state (see Eichenberg and Archer 1987 for a comprehensive review of federal consistency law).

Federal regulations require states with approved coastal management programs to list those federal activities which, in their view, need to be consistent. Regulations require states to monitor other federal

activities, and to list activities requiring federal licenses and permits that are likely to affect the coastal zone. The states also must assist agencies and project applicants to ensure that consistency is achieved, and conduct a technical and public review before formally concurring that consistency has been achieved (Code of Federal Regulations 1988).

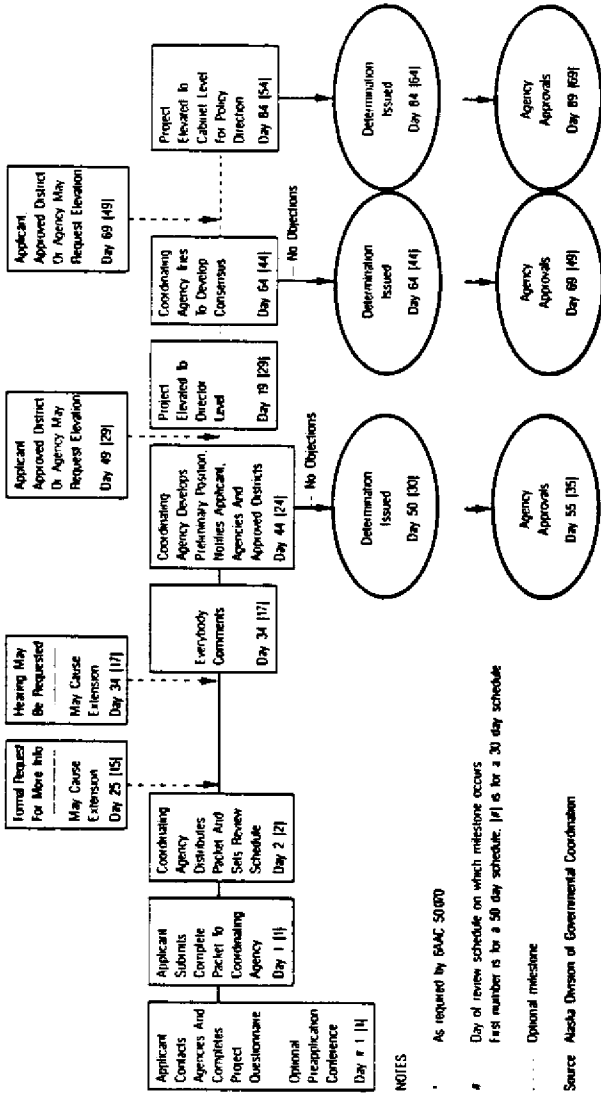
These state-level responsibilities in the administration of the federal consistency requirements are normally conducted by the state agency with direct responsibility for implementing the approved coastal management program. In California, for example, federal consistency review is done by the California Coastal Commission. In that state, most aspects of coastal zone management fall under that one agency which administers one comprehensive coastal statute. In Washington State federal consistency administration is done by the State Department of Ecology.

Alaska's administration of federal consistency is unique. First, the Alaska Coastal Management Program (ACMP) is a "networked" program, meaning that it relies on the permit authority of state resource agencies and approved local coastal programs to apply the adopted coastal management standards for the state. A Coastal Policy Council helps develop the statewide standards, and it reviews and approves district-level programs. Overall management of the program is within the Division of Governmental Coordination (DGC) of the Governor's Office of Management and Budget (OMB). That office is assigned responsibility, under Alaska Statutes Sec. 44.19.145 (11) to make federal consistency determinations.

Second, in addition to *federal* consistency, Alaska has added a *state* consistency requirement whereby the OMB makes a conclusive determination of consistency when there are two or more state permits needed on a particular project. In order to expedite the two levels of consistency review, the state has adopted a unique set of regulations for determining "project consistency" with the ACMP.

The "project consistency" regulations (called "project" consistency to distinguish them from "permit" consistency which is discussed below) establish a highly coordinated review system, with specific time limits and a process for elevating disputes to higher levels of government (6 Alaska Admin. Code, Ch. 50) (see Figure 5.1). The result of this process is *one* consistency determination on a project. This unified state consistency

Figure 5.1 Alaska Project Consistency Review Procedures.



Source: Hanley and Smith, 1987.

decision, with permit conditions attached, becomes the basis for input to all federal and state permits which are required by law to be consistent with the ACMP. And since the ACMP includes every major environmental aspect of a project, there is one set of mitigating conditions for all permits.

The "project consistency" regulations were adopted in 1984 in response to a variety of permitting problems. Generally, prior to the new regulations, project applicants found that with each state or federal permit they sought, local districts and state agencies would make consistency findings and propose permit conditions that were added to the permit. Since the permits they sought often were for the same project, the commenting agencies got many opportunities to propose permit conditions for the same project. Industry characterized this as "double dipping" (sometimes "triple dipping" -- one wag suggests the term "double tripping") and urged that the process be reformed to eliminate the repetition and the conflicting stipulations, and to provide some consensus, predictability, and specific time limitations on the review (Borah 1985). Further, the applicants had little role in the decision process, and they strongly urged that the state develop a consensus-based process resulting in the state "speaking with one voice." The Governor heeded their plea and, with the help of the Attorney General's office, promulgated an executive order which led eventually to the new regulations.

Thus, for Alaska, starting in 1984, "permit consistency" was replaced with "project consistency." DGC was established to manage the process. From 1984 through the end of 1987, 1,959 projects have been reviewed under the new procedures (Division of Governmental Coordination 1988). The projects are divided into three categories: those that are "categorically approved" (i.e., no significant impact on the coastal zone); those for which "general concurrence" is noted in advance (similar projects which can be consistent with a standard set of stipulations); and those requiring an "individual project review," consisting of a full evaluation (6 Alaska Admin. Code 50.050).

The DGC facilitates coordination among the four primary groups: the Department of Natural Resources, the Alaska Department of Fish and Game, the Department of Environmental Conservation, and the local district with an approved CMP. The DGC acts as time keeper and logistician. If disputes arise among participants, it seeks to mediate. If appropriate, it offers solutions to problems and proposes stipulations. The DGC staff have technical training and experience and "ground truth" the

permit conditions proposed (Fredriksson 1988). They must give "due deference" to the expertise of the state agencies and local districts, but they interpret this in a positive way and seek input from the experts best able to give it. Once the review process is complete, they render a consistency determination on the federal or state permits.

Of the 1,959 consistency reviews through 1987, 1,941 were found to be consistent and only 15 have been elevated to a higher level of decision making because of disagreements. A resource agency, a local district, or the applicant can request elevation. The first level of elevation is to division director, followed by further elevation to the commissioners of the state agencies, or to the Governor (6 Alaska Admin. Code 50.070). Elevation has tended to occur with large-scale projects with potentially severe impacts: coal mines, highways, new drillship technology in the Beaufort Sea, use of explosives in Bristol Bay, and others. About one-half of the elevated consistency reviews have related to offshore oil and gas development (Fredriksson 1988).

Time limits for consistency review are tight -- 50 days is the longest allowed. Extensions are possible, but for good reason, and there are limits set on extensions. For the most part, the limits are met. The average number of days each project was in review was 39 (Division of Governmental Coordination 1988).

Industry raises three concerns about the current process (Borah 1985; Noonan 1985; Hanley and Smith 1987). First, it claims that DGC is too passive with respect to evaluating the merit of the proposed permit conditions. It believes that the bases for some conditions are weak and untested and that too many conditions are piled on top of one another. It seeks a lead agency that will be more critical of proposed conditions and provide written justifications. DGC defends its current approach of seeking consensus among the many interests and relying on the technical skills of its own staff to test the value of proposed permit conditions (Fredriksson 1988).

Second, industry believes that the Alaska Department of Fish and Game and local districts have gained too much power through the new consistency process. It claims that the views of these agencies are too narrow, yet they receive disproportionate weight during consistency review. DGC notes that these two agencies have always had considerable power in the review process and that the consistency process has shed more light on their powers and given them a place at the table. In DGC's view, bringing

all the interests together in one process is the better policy since it avoids last-minute changes and legal challenges (Fredriksson 1988).

Finally, industry has argued that the lead agency for consistency should be one which, in its view, has the mandate to balance resource development and conservation. It points to the state's Department of Natural Resources as the agency best able to consider statewide and national interests in energy development and to balance those needs with environmental and resource conservation. This argument is raised to propose a counterweight to the perceived over-influence of the Alaska Department of Fish and Game. DGC notes that the Department of Natural Resources has a special bias because of its mandate to produce revenue from state lands. It is not a neutral party (Fredriksson 1988). DGC also observes that industry arguments along these lines have declined considerably. A bill introduced in the 1988 Alaska legislature would have moved consistency review to the Department of Natural Resources, but it was not supported through testimony by any industry representatives. In DGC's view industry has come to accept and work within the consistency review process (Fredriksson 1988).

The State of Alaska has commissioned a detailed study of the implementation of the project consistency review process. Professor Tom Gallagher of the University of Alaska is conducting an interview survey, and his report is due in the fall of 1988.

CALIFORNIA'S JOINT REVIEW PANELS

The National Environmental Policy Act (NEPA) of 1969 requires federal agencies to evaluate environmental consequences as part of their decision making and to prepare an environmental impact statement (EIS) when the project will have significant adverse environmental effects. In 1970 California adopted a "little NEPA," called The California Environmental Quality Act (CEQA), with similar requirements as the federal law, including preparation of an environmental impact report (EIR). As the pace of OCS and oil and gas development accelerated in the early 1980s off Santa Barbara County, environmental review was conducted separately for different aspects of the same development projects. For example, MMS would develop an environmental assessment on federal permits for the offshore portion of the project, while state agencies and

local governments were preparing separate EIR's for shoreline and onshore components.

There was general dissatisfaction with this system because of the varying timelines, the conflicting results, the added costs, and the many lawsuits. Santa Barbara County felt its interests were being underrepresented in the review process because federal and state-level agencies were taking the lead in these decision arenas (Petry and Smith 1985). Ultimately, these concerns led to the formation of Joint Review Panels (JRP), an organizational arrangement that was discussed briefly in Chapter 4.

In 1983 the large-scale Santa Ynez development project was proposed by Exxon Corporation, one which had a long history of bitter controversy and one which had both onshore and offshore components. Santa Barbara County and others proposed that a joint EIS/EIR be developed and that a panel of agencies be selected to guide it. This would bring all the affected federal, state, and local agencies together to deal with the contentious Santa Ynez situation. The county won MMS support by arranging for the applicant to pay the costs of the EIS/EIR document through the county, thus saving funds for the MMS. MMS had never done an EIS for a development and production plan and was not in the habit of budgeting for one. The county also suggested that the panel be limited to the major agencies involved. In 1976-78 joint NEPA/CEQA panels were used for oil and gas development off Ventura County, but the panels were too large, and the process broke down. The panel members selected for the Santa Ynez project included Santa Barbara County as lead agency, California Coastal Commission, State Lands Commission, U.S. Minerals Management Service, and the Governor's Office of Planning and Research. Although this first JRP had problems because of the difficulty of adapting to a new process and the highly charged public concern over the project, a single document was issued on a single timeline, and compromises between the county, cities, state agencies, and federal government were reached. (Petry and Smith 1985)

Since 1983 there have been eleven JRP's formed (Kahoe 1988). All have been for projects that relate to offshore oil and gas development. All of them have included a federal agency, though it is not mandatory that one be on every panel. The federal agency is not always MMS; panels have included the Army Corps of Engineers, Bureau of Land Management, and others. Having a federal agency involved avoids some of the strict time limits set under the state permit streamlining law (Kahoe 1988). The legal basis for the panels is found in federal NEPA regulations (section 1506.2)

and California CEQA Guidelines [sections 15170 and 15051(d)] and are further affected by the California Permit Streamlining Law (Government Code sections 65920 *et seq.*). Under CEQA guidelines, for example, if two or more agencies claim lead agency status, they may, by agreement, provide for cooperative efforts by two or more agencies, joint exercise of powers, or similar devices.

A Joint Review Agreement (JRA) establishes the arrangement among the major agencies constituting the panel. Although not a contract in a legal sense it is a joint policy statement about how the agencies intend to conduct themselves with respect to the project before them and the EIS/EIR requirements. The agencies participate voluntarily and ultimately are bound only by the laws and regulations under which they operate. Typically, the JRA specifies panel membership, voting rights of the panel members, the timeframe to be followed, the lead agency and its responsibilities, the duties of the JRP, procedures for handling agency disputes, and management of the consultants.

The JRP, which has been defined as a short-term association of permitting agencies set up to direct the preparation of an environmental document (Alarcon et al. 1987), has four major responsibilities. First, it performs the required "scoping" of the environmental issues to be addressed in the EIS/EIR and chooses those that are most relevant. Second, the JRP interviews and chooses the consultant, the required independent party who will do the technical work and prepare the document. Third, the panel guides and oversees the consultant's work. It is at this stage that the agencies make their most important substantive contributions. They review the consultant's assessment methodologies, the significance criteria to be used to measure impacts, the identification of environmentally preferred alternatives, and the refinement of mitigation measures. Although the consultant will take the initiative on these issues, panel members get closely involved and often influence the results. Fourth, the JRP conducts three public hearings: prior to commencing the environmental review, upon publication of the draft document, and at the time the document is certified as complete. Public comments are incorporated into the process as appropriate and are made part of the record (Alarcon et al. 1987).

Even though agencies are designated as having voting or non-voting status, in practice they work together closely on all aspects of the project. Those agencies with direct permit responsibility over significant

portions of the project normally are voting members. Negotiation and consensus decision making is sought whenever possible.

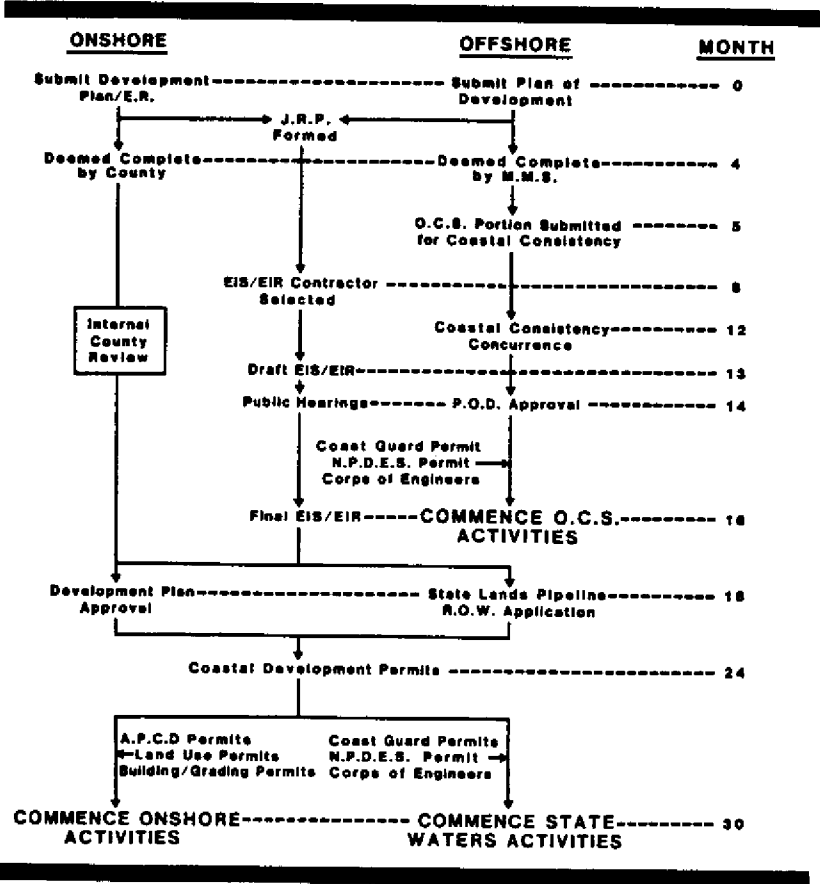
The applicant oil and gas company plays an important but limited role in this process. Applicants prepare the detailed project description and assist in the scoping process where environmental issues are identified. At this point they are no longer an integral part of the JRP's deliberations, though they are permitted to testify at public meetings and they are consulted at times about the feasibility of suggested mitigation requirements. (Kahoe 1988) The applicant contracts with the lead agency to pay for the consultant's costs. Sometimes agency staff time is included in the cost recovery. It is estimated that the per-project cost for an applicant is around \$3,000,000 for the EIS/EIR (Kahoe 1988; Pickford 1987).

Two state agencies, closely related to one another, assist the JRP process. They are the Office of Permit Assistance within the Office of Planning and Research (OPR) of the Governor's office, and the Secretary of Environmental Affairs office. ORP's authority comes from the Permit Streamlining law mentioned above, while the Secretary of Environmental Affairs responsibility comes primarily from an Executive Order detailing OCS coordination. A representative from the Secretary's office will normally be a non-voting panel member. He or she assists in resolving disputes over leadership, in coordinating the activities of the agency members, in keeping the agencies talking and the process on schedule. If an issue needs policy resolution, the Secretary's representative seeks to resolve the issue within the panel, or at higher levels in State government. At times they act as mediator in resolving agency differences.

A number of benefits result from the JRP process. First, jurisdictional issues and disputes are recognized and addressed at the outset. The required permits are identified, the sequencing and timeframes are noted, and the criteria for permit decisions and the information on which they are based are determined. This roadmap of the permit process helps determine the scope of issues to be evaluated in the EIS/EIR. (See Figure 5.2 for one person's view of the relationship of the JRP to the major permit decisions needed for a project.)

The EIS/EIR does not constitute permit review. It is the vehicle for a comprehensive environmental review and analysis which can help generate the information that will be needed in subsequent or parallel permit reviews. This highly coordinated approach is a sharp departure

Figure 5.2 California OCS Development Permitting Flowchart



Source: Pickford, 1987.

from previous practice and a major accomplishment of the JRP process. Conflicts that do arise among the agencies can be resolved early in the process. If they cannot be resolved, the joint document presents the range of views and notes specifically the areas of disagreement.

Second, the proposed mitigation measures identified in the EIS/EIR form a common basis for determining permit conditions that might be imposed in subsequent permit reviews. Applicants are forewarned and can plan accordingly. A technical appendix to each EIS/EIR identifies mitigation measures and the agencies with jurisdiction to require them. Agencies use the technical appendix as a reference in their permit review process. The lead agency insures that all proposed mitigation measures have been required by the review agencies before approving an applicant's Final Development Plan.

Third, the JRP process has spawned the "area study." An area study is an additional part of the EIS/EIR that analyzes impacts, alternatives, and mitigation for *subsequent* oil and gas development and production likely to occur in the same general area. An area study allows analysis of the full potential development of what is called a "sub-basin" even though only one platform-pipeline-onshore processing facility is being applied for. The area study allows the JRP to have access (although limited) to certain of the proprietary data not normally released by MMS. An area study permits potential cumulative effects to be studied since potential future growth is projected. Further, area studies allow local government to foresee future development pressures, and to devise policies or mitigation strategies to address them, while the first phase of the project is being analyzed. Thus collocation of onshore facilities and larger pipelines to accommodate new development have been required. Area studies also allow applicants to share the costs of transport and processing facilities that are built larger in order to accommodate new growth. The EIS/EIR will identify the amount of added capacity required of the infrastructure, and this can be charged against the subsequent offshore platforms added on to the system. Area studies reduce the amount of environmental analysis needed on new projects in the same sub-basin and provide valuable information that can be used in OCSLA section 19 consultations, federal consistency reviews, and other decision arenas. The coordinated, intergovernmental approach built into the JRP process facilitated the development of the area study concept.

Fourth, the process forces the generation of a great deal of useful information and compiles it into one document. Also, it provides the agencies with an opportunity to share their expertise.

Governmental commentators, and at least one from industry, believe the process has been beneficial. It has been flexible enough to respond to the varying circumstances of each project, and the amount of information generated has made a more informed process. Although JRP's do not resolve every problem, they do force agencies to sit down and iron out their differences. An industry commentator notes "... the California OCS permitting process is not an insurmountable problem for those operators willing to spend \$3 to \$4 million for regulatory approvals... [G]overnment-imposed procedures and timeframes can be used to the applicant's advantage" (Pickford 1987).

Another commentator noted areas where problems still remain to be worked out in the process: determining JRP membership and leadership; producing a document that effectively deals with differing agency mandates and conflicting expert and public opinion; and dealing effectively with consultants on issues of methodology, significance criteria, and appropriate mitigation (Alarcon et al. 1987).

CALIFORNIA PRIVATE MEDIATION OF FISHERIES AND OFFSHORE OIL INDUSTRY CONFLICTS

The OCSLA and its 1978 amendments require that MMS assess and mitigate the impacts of offshore oil and gas development on other activities and provide a fishermen's contingency fund. This fund is intended to compensate commercial fishermen for losses of property and economic activity due to interference by oil and gas development in federal waters. In California a private mediation and coordination effort has been established to supplement the processes set up by law and to address a variety of fish-oil problems.

Considerable animosity can exist between the fishing and offshore oil industries, even though the direct and indirect costs imposed by one industry on the other are small relative to the total value of product or investment in each. However, even at low relative costs, the absolute value of the damages can be substantial to the persons involved, with individual claims averaging \$3,000 and total claims (for the period Feb. 1979 - Oct.

1980) reaching \$586,000 (Cooper 1981). The incidence of damage is not spread evenly over the fishing fleet, and therefore uncompensated losses can have significant impact on individual enterprises -- especially on small fishing operations.

Conflicts between the two industries occur in three major impact categories: offshore impacts, onshore impacts, and biological impacts. From the perspective of the oil and gas industry, conflicts with fishing in offshore areas are predominantly in the form of interference with seismic exploration operations and service vessel navigation. Onshore, oil industry operations may face competition for facilities where these have been leased to fishermen or are specifically dedicated to their use. In general, however, the oil industry is able to outbid fishermen for port services.

From the perspective of fishermen, the offshore impacts include loss of fishing space, subsurface obstructions and debris, navigational hazards, additional vessel traffic, and oil spills. Onshore impacts include competition for port facilities and impacts of oil spills. Fishery resources also are subject to biological impacts related to discharges and effluents from drilling operations and oil spill effects. Also, there is concern about the effects of seismic surveys on fish behavior and larval survival. These biological effects are very difficult to quantify and their impact on fishing is even harder to discern.

Government programs have dealt with aspects of the compensation issue but have neglected many other concerns of the two industries. For this reason private arrangements to reduce frictions between the two industries have been attempted in the North Sea (Deutschen Fischerei-Verbandes n.d., Grant 1978, International Council 1979), Alaska (Jones 1986), Georges Bank (Finn 1980), and South/Central California (Knaster 1985; Giannini 1985; Uchikura 1985). The California example is the most instructive for Washington State interests because some of the operating conditions, types of fisheries, and organizations in the two states have similar characteristics.

Friction between the fishing and offshore oil and gas interests in California has a long history. From the early 1950s to the late 1960s offshore oil and gas projects were few and fishermen were able to accommodate the new use with relatively little difficulty. Fishermen were chiefly concerned about seismic exploration that used explosive devices that killed fish, and seismic arrays that damaged fishing gear when towed across fixed gear. They also experienced gear damage from entanglement with

debris discarded during oil and gas operations and net damage from pipelines, trenches, and abandoned well-heads. From the fisherman's perspective the alternatives were simply to avoid areas of known hazards and to seek compensation from oil companies when damage occurred. They sought compensation through private negotiations or through law suits. In both, the onus was on the fisherman to identify the responsible party and to document the damage. To the fisherman this process was time consuming, frustrating, expensive, and frequently unsuccessful.

In 1969 the Santa Barbara oil spill resulted in a spate of claims by fishermen for damages to gear, loss of fishing time, and injury to fish stocks. Obtaining redress for these claims was fraught with the same problems as above. Following the spill, there was a break in the development of offshore oil and gas in Santa Barbara Channel, but this was shortlived. By the late 1970s, the demand for oil had increased considerably, new discoveries had been made, and there were national policy priorities to develop offshore resources to offset energy dependency and to maintain federal revenues. This resulted in a surge of activity offshore of California -- especially seismic exploration activity -- and this significantly heightened the level of conflict between the two industries.

In the public sector in the early 1980s, fisheries and oil and gas conflicts could be mitigated through the use of stipulations on leases and placement of conditions on permits. For example, stipulations required wellhead and pipeline designs which allow trawl gear to pass unimpeded, fisheries training programs for industry personnel, and consultation with subsistence fishermen. Permit conditions for seismic operations required prior notification and consultation with state fishery management agencies. Also, OCS orders required the labeling of all equipment used by the offshore oil and gas industry to facilitate attribution of damage (see Chapter 2).

The Fishermen's Contingency Fund established in the OCSLA amendments of 1978 is designed to compensate fishermen when the damage they suffer can not be attributed to an identifiable party, is not due to their own negligence, and is not otherwise compensable by insurance (OCSLA, 43 U.S.C. Sections 1841-46). These measures were inadequate to arbitrate the day-to-day operations of the two industries because they were not well enforced and the compensation process was a long and tortuous one. In addition, there were major holes in the compensation scheme because the federal program applied only in federal waters beyond the 3-mile territorial sea.

The fishery and oil and gas industries were increasingly frustrated with operational problems that resulted in gear damages, delays in compensation, and expenses incurred in trying to deal with the OCSLA process. At the invitation of the Santa Barbara California Sea Grant Program Marine Advisor (a university-based extension specialist), both industries and some government agency representatives agreed to meet to discuss these issues in early 1983. Through this process, the group decided to bring in a neutral party, the Mediation Institute, to assist the industries in negotiations toward resolution of the chief issues. These issues were defined as: 1) lack of communication between the two industries (especially on conduct of seismic operations and on compensation for gear damage); 2) navigation and traffic issues; 3) effects of oil and gas operations on the fisheries resources; and, 4) compensation to fishermen for long-term loss of fishing opportunities.

Through this mediated process (financed by a foundation grant), it was decided to establish a Joint Oil/Fisheries Committee composed of (originally three and now) five representatives of each industry as voting members. The Santa Barbara Sea Grant Marine Advisor and the mediator would participate as technical advisor and mediator, respectively. Expenses would be borne by the participants with the exception of the mediator, who is jointly contracted on retainer by the two industries. The oil industry is represented through the California Coastal Operators Group, an organization consisting of the major oil companies operating off California and some eighty associated petroleum industry support businesses. Fishery industry participation is dispersed through members of various fishing organizations.

As a first key step, the Joint Oil/Fisheries Liaison Office was established under the oversight and management of the Joint Committee. This office is funded by the California Coastal Operators Group. It consists of one full-time professional staff person and modest staff support. It is directed to facilitate communication on a day-to-day basis between the two industries. It advises the oil industry of changes in the patterns of commercial fishing. It advises fishermen of oil industry exploration or development activities that may temporarily disrupt or affect fishing operations. In addition, the Liaison Office assists fishermen and oil companies in settlement of claims for damages where the parties are identified. In the event of no identifiable party, the Liaison Office assists fishermen in preparing claims to be submitted to the federal Fishermen's Contingency Fund. If a fisherman is in serious financial difficulty due to the damage claimed, the Liaison Office can assist the fisherman in applying

to the new Santa Barbara County Local Fishermen's Contingency Fund, which can loan money to fishermen awaiting federal compensation. The local fund can compensate for damages occurring within state waters (Fleischer 1987), and is used for specific fisheries enhancement projects. The local fund is based on pro rata contributions from the oil companies operating in Santa Barbara waters.

The Joint Oil/Fisheries Liaison Office and the Joint Oil/Fisheries Committee (1986) produced a document entitled "A Manual for Geophysical Operations in Fishing Areas of South/Central California" which educates each industry about the other and sets out useful information on contacts. In addition, the Joint Committee has worked with state and federal agencies to obtain modification of the State Lands Commission's permits for seismic operations.

With respect to navigation and traffic conflicts, the Joint Committee has developed agreements between the industries on establishment of a Santa Barbara Channel Oil Service Vessel Traffic Corridor Program. This program is voluntary, but it reduces the conflicts between the vessels of each industry by providing predictable areas of operation, avoidance of heavily fished areas, and clear transit in areas of heavy oil service activity.

The Joint Committee has defined two major research questions to be of chief interest: the effect of seismic operations on fish eggs and larvae, and the effect of seismic operations on dispersal (and thereby catchability) of rockfish. The Joint Committee has worked with state and federal agencies to obtain, define, and design studies of these issues. Some results are available and have formed the basis for further field study (MMS 1987).

Despite hard negotiations, settlement of the issue of compensation for long-term loss of fishing opportunity has been at a standstill since 1985. The major difference of perspective is the oil industry's insistence on a case-by-case compensation approach and the fishing industry's preference for an institutionalized approach.

Several recent developments at the local and state level may lessen the demand for a privately established compensation mechanism -- thus implementing the fishermen's preference for an institutionalized approach. The new Local Fishermen's Compensation Fund established by Santa Barbara County is discussed above. An equally new Fisheries

Enhancement Fund is established by Santa Barbara County. This fund would mitigate preclusion of fishing during such activities as construction of offshore facilities. The fund helps offset project-specific impacts and cumulative impacts on commercial fisheries. Oil companies contribute to this fund as a condition of project approval.

An additional institutionalized approach to fisheries compensation is now occurring at the state level (Kahoe 1988). Mitigation of past and cumulative impacts on commercial fishing can be paid for with state funds derived from leasing activity located 3-6 miles offshore, the "8(g)" zone.

The Joint Committee process has developed a seemingly effective private mechanism for dealing with operational problems of both industries. Social science research performed by Cicin-Sain and Tiddens (in press and unpublished), of the University of California at Santa Barbara, has evaluated the private mediation of fisheries and oil and gas conflicts. They report that there is general support by both industries for the Joint Committee and Liaison Office as a means of getting together and discussing problems. These efforts have led to better communication and significant action to reduce conflicts, especially those between fishing vessels and seismic and service vessel operations. However, they report that neither industry is satisfied with the results of research, so far, concerning seismic effects on fisheries. Also, both industries recognize that there has not been significant progress on compensation issues (although the new state-funded mitigation program discussed above can now deal with past and cumulative impacts). They further found that, where impacts occur to a broad class of persons, a public sector program may be more effective at making acceptable trade-offs. The new mitigation program, again, is addressing this weakness which the authors pointed out.

One aspect of the Cicin-Sain study reports on the views of the two industries with respect to the use of mediation as a mechanism for private dispute resolution. The oil companies are generally happy with mediation. The fishermen, while citing progress, are concerned that they should have remained more active in the public process to focus attention on their resource concerns and compensation interests. The researchers also note, however, that the confidence of the fishermen in the public process is not particularly good.

Fishermen and their associations are diverse and questions have been raised about the representation of all fishing interests by only a few members of the Joint Committee. The increase in size of the Joint

Committee from six to ten members is primarily attributable to attempts to add fishing interests. (A geophysical industry representative was added as well.)

Public agencies support private mediation efforts. If the terms of an agreement among conflicting parties are successfully negotiated, these terms can be incorporated into permits. For example, California used the recommendations of the Joint Oil/Fisheries Committee when revising its Geophysical/Geological permit (Joint Oil/Fisheries Committee 1986).

The use of a privately mediated approach to solving the problems of fisheries and oil and gas conflicts seems to work well in areas where there is a concrete history of interaction between the two industries. Communication is improved and solutions are identified. For areas where there has been little or no prior contact between the two industries, the need for such interaction is clear, but the method by which to encourage it is not. There are no legal mechanisms in most state or federal law that require industries to use this approach. MMS has proposed a stipulation for Lease Sale 91 that would "mandate" an inter-industry committee to improve communication and problem-solving. Mandated inter-industry cooperation may not be as effective as self-interest or fear in motivating private mediation. In the California case, the Santa Barbara Sea Grant Program Marine Advisor was a significant player in bringing the parties together and in assisting them to obtain technical expertise and neutral mediation where required. However, the key element appeared to be a sincere interest by both industries to solve long-standing problems and to lessen operating and transaction costs.

It should be noted that private industry arrangements are intended to facilitate inter-industry communication and achieve mutually acceptable compromise. They do not substitute for the legal requirements established by appropriate governmental agencies (Joint Oil/Fisheries Liaison Office and Joint Oil/Fisheries Committee 1986).

CONCLUSIONS

Each of the organizational arrangements outlined above is used to make decisions that affect the outcome of OCS-related actions. Programs or projects get modified in accordance with conditions, stipulations, or other requirements added through these processes. Thus the matter of who participates, who manages, how thorough and fair the deliberations are, the quality of information relied on, and other factors of organizational process are important in evaluating these mechanisms. Some preliminary observations are possible based upon a general comparison of these techniques.

Power relationships shift among the participants as a result of the new procedures.

In Alaska the project consistency review tends to bring out the concerns of local government and the Alaska Department of Fish and Game more than was the case beforehand. Their place at the table has been assured. In Florida the Governor's staff has taken the lead in bringing together the comments of many agencies, including the Department of Environmental Regulation, where the federal consistency power lies. In California's JRP, local government initiative often has put them in the lead of a cooperative government effort for determining mitigation strategies. And the Joint Oil/Fish Committee and Liaison Office, a private organization, has produced cooperative operating procedures, stimulated research, and assisted fishermen and the oil industry in settling damage claims. Thus, information is packaged in new ways and certain information elevated in importance because of the attention it gets at higher levels of government and the importance it plays in decision outputs. These new organizational arrangements are not simply neutral coordination vehicles. They change the character and quality of decisions. For this reason, great care must be taken in establishing their structure and procedures.

For each of these new arrangements to work, a coordinating office must be established and paid for.

The staff of the office are professionals with training in some aspect of resources/environmental assessment work. Their responsibility is to bring together the views and information of many technical agencies, local planners, private interests, and others, to help shape a well-

coordinated (or unified) response to the project. They often refer to themselves as "facilitators," "time-keepers," "ground-truthers." In some cases, formal or informal "mediation" is a requirement of their office. With regard to OCS-related issues only, the Alaska DGC uses three full-time employees statewide and estimates about \$185,000 per year is spent for consistency reviews and OCSLA consultations. In Florida, between four and five full-time employees spend the majority of their time on OCS-related reviews, worth about \$200,000 per year (including the time of individuals in other agencies such as the DER where the federal consistency responsibility lies). In California, where extensive development and production is under way and there is an elaborate planning and permit review function, the numbers of people are much higher. The Secretary of Environmental Affairs has ten full-time employees for OCS issues and the Santa Barbara County energy division has had up to 20 professionals working on project review at any one time. Environmental Affairs' function is to coordinate and facilitate all state waters and OCS-related oil, gas, mineral and other development, including JRP's, OCSLA consultations, rule-making negotiations on air pollution control, local assistance grants, fisheries mitigation programs, etc. Their annual budget, exclusive of grant funds, is approximately \$700,000 (Kahoe 1988). Finally, the Joint Oil/Fisheries Liaison Office consumes the time of one full-time employee (excluding the time of the Sea Grant advisor, a mediator, secretarial support staff, and the ten-member committee) and significant financial support for the monthly Marine Advisory Newsletter published by California Sea Grant. Annual costs are about \$120,000.

Leadership plays an important role in these new organizational arrangements.

Prior to the establishment of these offices, leadership for project review and approval often was the responsibility of the project applicant. Because dozens of agencies were involved in a complex process, with each agency reviewing the project according to its limited legal mandates, government as a whole abdicated overall leadership responsibility. In the past ten years, this situation has changed dramatically for OCS project review, as well as other areas (e.g., regulation of land development in urban areas). At the Governor's office level in Florida, Alaska and California, there is an official who is given responsibility for knowing the entire process and its idiosyncracies, and assisting and prodding that process so that it works efficiently. This does not imply that there is complete consolidation of functions. In Florida for example, the heads of some state agencies are independently elected -- their review of OCS

projects under their own laws is done independently. In California, federal consistency determinations are the responsibility of an independently managed Coastal Commission and are processed separately.

The organizational arrangements have been fairly carefully outlined by law or agreement.

Participants, timetables, criteria for review, and other such matters are specific. Effective coordination appears to require a good bit of structure. It is not left to chance. Yet in all four situations the nature of the proposed action dictates how the process actually works. It can be more or less elaborate depending on the issue. This is important since the issues range among a state's policy regarding the 5-year leasing program, a permit action on a particular exploration or development project, or the level of compensation in the case of lost or damaged fishing gear. California's JRP is an especially good example of flexibility in implementation. The agreement reached at the outset establishes the parties and the leadership, and the EIS/EIR requirements allow flexibility on issues, types of mitigation, etc. Each JRP takes on a life of its own and can respond to the most important issues and constraints facing the interested parties. In Florida and Alaska, leadership of the process remains the same but the interest group or agency participation, the amount of information needed, and the timetables can vary depending on the issue. This balance between defined structure and flexible implementation is essential for a complex subject like the OCS oil and gas program.

Private inter-industry arrangements for mediating disputes or proposing policy or doing research can be extremely valuable.

These work best when dealing with issues of direct interest to and under the direct control of the affected industries. However, most OCS-related disputes have public policy aspects to them such as environmental, recreational, esthetic, or cumulative benefits or costs. Agreements between oil and gas operators and fishing interests may neglect broader public concerns. Negotiation and mediation among private interests should be done as an integral part of an essentially public process. This does two things. It assures that the facilitator/mediator and the private process as a whole are accountable to a person or office that is, in turn, accountable to the public (see Suskind 1981). It also encourages people with power to implement decisions to participate in the private negotiation process, which improves its chances for success (Bingham 1986).

In developing governmental structure and policy for potential OCS development activity, states facing OCS development should pay particular attention to the **coordination function** that is needed at the state level. Who leads, who participates, what processes are followed, who staffs it, and who pays are the central questions. The experience outlined above should be helpful in answering those questions.

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6

General Conclusions

1. The Outer Continental Shelf Lands Act (OCSLA) encourages a rational model of decision-making for OCS oil and gas leasing and development. It calls for a top-down approach whereby the Secretary of the Interior balances the OCS energy, revenue and environmental needs of the country.

This balancing is done at many scales -- from a very broad scale in the 5-year program to the very specific in permit conditions imposed on a leased tract. Through a technical staff of specialists trained in resource estimation and recovery, risk assessment, and environmental evaluation, information is collected, compared, and balanced, and an optimal decision is reached for each stage in OCS oil and gas development.

For a variety of reasons, the rational model breaks down in practice. People have widely varying perceptions about tolerable levels of risk, the value of environmental resources, and the sufficiency of information for decision making. The OCSLA presents an almost impossible task when it sets forth national policy to achieve many goals simultaneously: encourage development, protect the environment, balance multiple uses, and return revenue to the U.S. government.

2. An additional model for understanding OCS decision making is that of bargaining and negotiation among MMS, state and local officials, other public agencies and private interests.

At virtually every stage of OCS development there is an intense and ongoing dialogue among many players. At each stage the issues of concern go through a new iteration, and different decision tools are used to accommodate the interests. The bargaining skills of the parties become crucial, as does legal and political maneuvering in the courts or Congress. Information is collected and used in tactical ways to advance positions or to undermine an opposing view.

3. MMS plays a central role in this negotiation arena.

They define the steps in the decision process, the subject matter and scope of decisions, and the timetable for particular lease sales and for the entire leasing program. Through the Environmental Studies Program and EIS process, MMS controls the generation and flow of much critical information.

Standing behind this structure is a powerful set of forces which guides MMS decision making and establishes the agency's reason for being. These forces include consumer demand for energy products, industry interest in meeting that demand, national policy to encourage development of domestic supplies of oil and gas, and world geopolitical forces and their effect on the price and availability of oil. Thus MMS enters the negotiating arena with a clear agenda backed by powerful constituencies advocating expeditious development of oil and gas.

4. State and local governments play a lead role in the negotiation process as well. They have become the policy protagonists for environmental and socioeconomic issues.

Through Congressional, legal, and political action, and through mandatory consultation requirements, issues important to the states have been forced onto the MMS agenda. Since it is in their "neighborhood" that a new industrial use is proposed, and that natural resources and established ways of life are perceived to be threatened, state and local citizens and politicians react swiftly and forcefully. It is fair to conclude that environmental and socioeconomic issues have dominated the OCS decision process for about twenty years.

Environmental and socioeconomic issues are not solely the concern of state and local government. Federal agencies such as the

National Oceanic and Atmospheric Administration, U.S. Fish and Wildlife Service, National Park Service, and Environmental Protection Agency play an important role in OCS decision making. They perform studies and administer laws that protect species, habitats, water quality, and historic sites.

However, the adversarial strategies of the states -- Congressional moratoria, lawsuits, political pressure -- have led the way in getting the environmental and socioeconomic issues onto the federal agenda. State initiatives encourage action by federal resource agencies and new policy considerations by MMS.

5. State preparedness for OCS oil and gas development must be guided by the role they will have to play. This role requires agenda setting, bargaining and negotiation, and effective use of information designed to influence OCS decision making.

States need a four-pronged approach to preparedness: a responsive structure within state government that has the capacity to maintain the dialogue over many years; policies that can guide the formation of negotiating positions; accessible information that helps to shape the policies and defend them; and an overall strategy for effectively using the MMS process to achieve state objectives. These four elements are discussed next.

6. The structure established in state government must be authoritative and competent.

It is authoritative if it has the full confidence of the chief executive and is backed by law and/or enforceable policies addressing OCS issues. These would include state coastal management laws, executive orders, and industrial siting policies. The structure must enable action to bring together the diverse views within the state and to represent the state in dealing with federal and local agencies. It must be an effective participant in the forums set up for discussing OCS issues, such as the 5-Year Leasing Program, EIS scoping and review, and the OCSLA consultation processes. It must have authority to negotiate over preferred management decisions such as deferrals, stipulations, permit conditions, and mitigation programs.

The structure is competent if it has sufficient people technically qualified, and senior enough, to deal with OCS issues. This requires stable allocation of state funds so that continuity and institutional learning take place. Chapter 5 addresses structural issues in some detail.

7. A state must have coastal and ocean management policies for guiding its substantive decisions so that they are principled.

Policies can be represented in parks or reserves designated for maximum levels of protection or in preferred locations for industry. Policies can discuss consolidation of onshore facilities and mitigation requirements or can express priorities for existing ocean users.

State and local policy has tended to evolve as OCS development proceeded. State officials take pride in the gradual refinement of their policies over time and stress that the long-term nature of OCS activity requires persistent assertion of their preferences before MMS can be expected to respond. Chapters 3 and 4 point out the evolution of state and local policy in a number of locations around the country.

8. State and local OCS personnel must have the skills, information, and resources needed to be effective representatives.

In addition to having technical qualifications appropriate for OCS decision making, these personnel need access to specialists in state agencies or universities with a wide range of disciplinary skills. Ocean issues require the attention of many units of government, and this "attention" requires budgetary support. As the state of Oregon recently said in a report, there must be a "state/local budget strategy with a commitment of resources commensurate with ocean management responsibilities" (Oregon Ocean Resources Management Task Force 1988).

9. A state needs a conscious strategy for linking its structure, policies, and information to the process and decision alternatives of MMS.

There are discussion forums and management tools within the process that provide opportunities for assertion of state interests.

Discussion forums include the 5-Year Leasing Program stage, where the general outlines of OCS development are laid out; the EIS process, which provides for a full review of alternatives and mitigation strategies; and the mandatory consultation procedures set up in Sections 18 and 19 of the OCSLA. The primary management tools are four: area deferrals, lease stipulations, permit conditions, and mitigation programs.

These forums and management tools are milestones in a continuing process; they are the method and means of exchange with MMS and with industry. A state's goals can be raised, modified, or compromised at each of these stages. A state needs precise knowledge of the rules of the game to plan for effective participation.

10. States can learn from the experience of other states, even though they differ significantly in ocean environments, coastal economies, political culture, and petroleum resources.

Massachusetts, North Carolina, Florida, California, and Alaska have had to deal with problems of structure, policy, information, and strategy. Their experience is a point of departure for a state first studying how to face OCS development. Not only can substantive ideas about objectives and organization be obtained, but insights into the level and focus of effort at particular stages in the MMS process can be useful. The following state and local experience is particularly worthy of further attention:

- o Florida's structure, policy, and strategy at the prelease, lease, and exploration drilling stages, because of their relative success in negotiating deferrals and stipulations that protect important resources in the Gulf of Mexico (Chapter 3).
- o Alaska's highly organized project consistency procedures, which effectively bring together the diverse state agency and local interests and fashion a single state position on an oil and gas project (Chapter 5).
- o California and Santa Barbara County organization and policies that institutionalize mitigation requirements and bring greater predictability to the mitigation planning process (Chapter 4).

11. Scientifically derived information is an important part of the OCS process, but it is only one part of a complex arena that includes legal, political, and emotional forces. Greater quality and utility of scientifically derived information can improve the dialogue among the parties.

Scientifically derived information does not determine the optimal outcome in OCS development: rather, it is a basis for negotiations among the parties. It is part of the language of the political dialogue.

Greater reliance on scientifically derived information encourages decision making that is more accountable to the public. Most officials in our culture want to be seen as relying on information that is derived objectively, that could be replicated by others. Scientific rationality is seen to be close to "truth" and decisions taken are easier to explain to the public if they can be justified as "scientifically" derived.

Also, in our culture we strive to link our decisions to broader societal goals--efficiency, protection of the biosphere, consumer benefits, national security. Thus we seek to justify a decision in terms of a goal; i.e., to make a rational connection to it. Scientifically derived information helps us test whether we are serving a goal or detracting from it. In this sense the use of scientifically derived information can help us achieve broader societal goals.

12. Scientifically derived information is most useful if it is directly relevant to the OCS decision-making process.

The information must be made to fit the dialogue -- the right amount at the right time that addresses the issues and the alternatives under discussion. Because the process is so long and covers so many decision points, and because of inherent uncertainty about so many aspects of OCS development, a continual flow of informed professional judgment can be an important contribution of the science-based community to the decision process. This requires continuity of staff and ongoing access to technicians and scientists in agencies and universities. It requires that informed professionals with a diversity of perspectives are drawn directly into the policy dialogue. It requires analysts familiar with interdisciplinary problems who can synthesize and interpret information from natural and social science and use that information in the policy process.

13. The biggest problem in the development and use of scientific information is in determining what it means.

The concepts of risk and value are entwined with human judgment -- and the judgment of one person can differ dramatically from that of another. Thus, one can identify the numbers of seabirds or whales that frequent an area of the ocean where drilling may occur. Also, one can make probabilistic statements about the level of risk that animals will be exposed to. However, determining what level of risk we are willing to tolerate, and how important a biological resource is to us, are matters of human judgment and underlying values.

14. The MMS areawide leasing policy, in which large amounts of the OCS are initially identified as available for lease, detracts from informed dialogue and negotiation with the states.

So little is known about industry interests and natural resources, that the debate is more political than technical (see Chapters 2 and 3). MMS insists that a focusing of analysis and review will occur at later stages in lease sale planning. But most states doubt that adequate analysis will be performed, and that decision alternatives will be preserved through the process. Thus, the battle for intervention continues in Congress, the courts, and political arenas.

15. The MMS environmental studies program does not match well with the diversity of information needed by state and local interests. Efforts to reform the program should continue.

MMS stresses offshore studies while states appear more interested in coastal and land use issues. Indeed, Chapter 4 shows that onshore issues are the ones that jeopardize development projects. The timing of studies may not allow the results to be effectively used, and many issues important to the state may get insufficient attention. Reforms have already been made in the environmental studies program, and it is going through yet another analysis by the National Academy of Sciences at this writing. The environmental studies program might be designed better to fit both the rational model and the bargaining model, recognizing the inherent limits in science-information.

16. MMS has already begun to embrace the task force "movement," and this is a positive trend that should be continued.

The formation of a task force of officials from different levels of government and different functional agencies and interests will allow quicker exchange of information and rapid identification of issues and preferences. MMS has experimented with federal-state task forces with respect to studying hard minerals, and California and others have had considerable success with the Joint Review Panels, a type of task force, reported in Chapter 5. The experience with the federal-state task force approach needs further research. It is an emerging form of governance that operates by its own rules to analyze problems and meld policies of diverse entities. Still, it appears to be essential as a problem-solving mechanism in the complex U.S. legal-political system and a useful device for bringing the rational model and the bargaining model closer together.

17. MMS should attempt to find ways to share more geologic and petroleum resource information with state and local governments.

Policies of the OCSLA and budgetary constraints make private industry the major source for data about potential petroleum resources. MMS has access to much of this information, but it is considered proprietary and can only be disclosed in ways that protect the interests of individual companies. MMS has considerable discretion over the use of aggregate information that is generalized and "sanitized." Greater sharing of this information would be useful to the states.

This would improve the planning process since there would be less uncertainty about likely oil and gas development activities. Also, it would improve trust between federal and state interests through a greater openness in sharing information. The area study process developed offshore of Santa Barbara County, where additional information about potential reserves was made available, is a step in the right direction (see Chapters 4 and 5).

18. States should think more broadly about "ocean management" in general, rather than become preoccupied with OCS oil and gas issues alone.

Other ocean uses, such as fisheries, ocean dumping, ocean incineration, military activities, mining, and recreation, become important in the OCS oil and gas dialogue because oil and gas activities affect other users of the ocean, as well as the ocean environment. If a state has policies regarding its diverse interests offshore, it can be more effective in OCS oil and gas negotiations, and in evaluating any other proposed ocean use. An ocean policy or strategy can help states achieve other objectives as well, such as economic development, educational improvements, and environmental protection.

There is a movement among coastal states to begin broader ocean planning. Recommendations of the Coastal States Organization (1987), Council of State Governments (1988), and National Governors Association (n.d.) have encouraged state initiatives in ocean policy and planning. They are responding to the U.S. Proclamation of 1983 establishing an Exclusive Economic Zone (EEZ) extending 200 miles off the coast. The recommendations of these groups are justified on legal and political grounds, as well as on the grounds of protection of state interests. The goal is to make the states an equal partner with the federal government in ocean management.

19. The State of Oregon offers the leading example of state-level ocean planning in the U.S.

By 1990 Oregon will have prepared an Ocean Resources Management Plan covering its territorial sea and beyond to the EEZ adjacent to its shores (Oregon Ocean Resources Management Task Force 1988). The entire range of uses must be addressed. A broad-based task force has been set up to oversee preparation of the plan. This type of state-level preparation, if properly conducted, will give the state the capacity to be a true partner with the federal government in the management of ocean resources that affect the people of Oregon.

20. States face many obstacles in forging an effective ocean management strategy. Chief among these obstacles are the organizational constraints built into the existing framework of government.

Creating horizontal linkages and complementary policies among agencies as diverse as those concerned with fisheries, water quality, and marine mineral development is a large task. Add to that the task of building vertical linkages from the local level to the international, and the task becomes even more complex. Yet, as the experience with OCS oil and gas development shows, these horizontal and vertical connections must be made if the diversity of interests demanding consideration in decisions are to be accommodated. This study shows that the linkages and policies are beginning to be formulated in small but important ways throughout the country. Experience in resolving issues in OCS oil and gas development, then, is an important step toward improved ocean management.

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Appendices

Appendix A: OCS Laws: Related to Mineral Resource Development on the Outer Continental Shelf.

TITLE	CITATION	PUBLIC LAW
ADMINISTRATIVE PROCEDURE ACT (INCLUDES FOIA, P.L. 89-487; PRIVACY ACT, P.L. 93-579; GOVT IN SUNSHINE ACT, P.L. 94-409)	05 U.S.C. 551-559, 701-706	P.L. 89-554
ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT	16 U.S.C. 3101-3233	P.L. 96-487
ALASKA NATIVE CLAIMS SETTLEMENT ACT	41 U.S.C. 1601-1628	P.L. 92-203
ARCHAEOLOGICAL RESOURCES PROTECTION ACT OF 1979	16 U.S.C. 470aa-470ll	P.L. 96-095
ARCTIC RESEARCH AND POLICY ACT OF 1984		P.L. 98-373 (TITLE I)
CLEAN AIR ACT	42 U.S.C. 7401-7642	P.L. 95-095
COAST GUARD AUTHORIZATION ACT OF 1984		P.L. 98-557
COASTAL BARRIER RESOURCES ACT	16 U.S.C. 3501-3510	P.L. 97-348
COASTAL ZONE MANAGEMENT ACT (NATIONAL COASTAL RESOURCES RESEARCH AND DEVELOPMENT INSTITUTE)		P.L. 98-364 (TITLE II)
COASTAL ZONE MANAGEMENT ACT OF 1972	16 U.S.C. 1451-1464	P.L. 92-583
COMPREHENSIVE ENVIRONMENTAL RESPONSE COMPENSATION AND LIABILITY ACT OF 1980	42 U.S.C. 9601-9657	P.L. 96-510
CRUDE OIL WINDFALL PROFITS TAX ACT OF 1980	26 U.S.C. 4986-4998	P.L. 96-223
DEEP SEABED HARD MINERALS RESOURCES ACT	30 U.S.C. 1401-1473	P.L. 96-283
DEEP SEABED HARD MINERALS RESOURCES ACT, AUTHORIZATION		P.L. 98-623 (TITLE IV)
DEEPWATER PORT ACT AMENDMENTS OF 1984		P.L. 98-419
DEEPWATER PORT ACT OF 1974	33 U.S.C. 1501-1524	P.L. 93-627
DEPARTMENT OF DEFENSE AUTHORIZATION ACT OF 1984, SECTION 1260		P.L. 98-094 (TITLE XII)
DEPARTMENT OF ENERGY ORGANIZATION ACT	42 U.S.C. 7101-7352	P.L. 95-091
DEPARTMENT OF INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT OF 1984		P.L. 98-146
EMERGENCY NATURAL GAS ACT OF 1977	15 U.S.C. 717 nt	P.L. 95-002
EMERGENCY PETROLEUM ALLOCATION ACT OF 1973	15 U.S.C. 751-760h	P.L. 93-159
ENDANGERED SPECIES ACT OF 1973	16 U.S.C. 1531-1543	P.L. 93-205
ENERGY POLICY AND CONSERVATION ACT	42 U.S.C. 6201-6422	P.L. 94-163
ENERGY REORGANIZATION ACT OF 1974	42 U.S.C. 5801-5891	P.L. 93-438

OCS Laws, continued.

TITLE	CITATION	PUBLIC LAW
ENERGY SUPPLY AND ENVIRONMENTAL COORDINATION ACT OF 1974	15 U.S.C. 791-798	P.L. 93-319
ENVIRONMENTAL QUALITY IMPROVEMENT ACT	42 U.S.C. 4371-4374	P.L. 91-224
ENVIRONMENTAL QUALITY IMPROVEMENT ACT, AUTHORIZATIONS		P.L. 98-581
EXCLUSIVE ECONOMIC ZONE OF THE UNITED STATES OF AMERICA, MARCH 10, 1983	PROC. 5030	
EXPORT ADMINISTRATION ACT OF 1979	50 App U.S.C. 2401-2420	P.L. 96-072
FEDERAL ADVISORY COMMITTEE ACT	05 App U.S.C. 1-15	P.L. 92-463
FEDERAL ENERGY ADMINISTRATION ACT OF 1974	15 U.S.C. 761-790h	P.L. 93-275
FEDERAL OIL AND GAS ROYALTY MANAGEMENT ACT OF 1982	30 U.S.C. 1701-1757	P.L. 97-451
FEDERAL REGULATION, FEBRUARY 17, 1981	E.O. 12291	
FEDERAL WATER POLLUTION CONTROL ACT	33 U.S.C. 1251-1375	P.L. 92-500
FISH AND WILDLIFE ACT OF 1956	16 U.S.C. 742a-742j-2	P.L. 84-1024
FISH AND WILDLIFE ACT OF 1956 (FISHERIES LOAN FUND)		P.L. 98-498 (TITLE IV C)
FISH AND WILDLIFE COORDINATION ACT	16 U.S.C. 661-666c	P.L. 85-624
HAZARDOUS LIQUID PIPELINE SAFETY ACT OF 1979	49 App U.S.C. 2001-2014	P.L. 96-129
INTERVENTION ON HIGH SEAS ACT	33 U.S.C. 1471-1487	P.L. 93-248
LAND AND WATER CONSERVATION FUND ACT OF 1965	16 U.S.C. 4601-4-46011-11	P.L. 88-029
MAGNUSON FISHERY CONSERVATION AND MANAGEMENT ACT	16 U.S.C. 1801-1882	P.L. 94-265
MAGNUSON FISHERY CONSERVATION AND MANAGEMENT ACT, AMENDMENTS		P.L. 98-623 (TITLE IV)
MARINE MAMMALS PROTECTION ACT AUTHORIZATION		P.L. 98-364 (TITLE I)
MARINE MAMMALS PROTECTION ACT OF 1972	16 U.S.C. 1361-1407	P.L. 92-522
MARINE PROTECTION RESEARCH AND SANCTUARIES ACT OF 1972 (SANCTUARIES PROVISIONS AT 16 U.S.C. 1431-1434)	33 U.S.C. 1401-1445	P.L. 92-532
MARINE RESOURCES AND ENGINEERING DEVELOPMENT ACT OF 1966	33 U.S.C. 1101-1108	P.L. 89-454
MARINE SANCTUARIES AMENDMENTS OF 1984		P.L. 98-498 (TITLE I)
MARINE SANCTUARIES PROVISIONS OF P.L. 92-532	16 U.S.C. 1431-1434	P.L. 92-532
MINERAL LEASING ACT OF 1920 (INCLUDES PROVISIONS OF THE MINING LAW OF 1872)	30 U.S.C. 22-287	41 Stat 437
MINING AND MINERALS POLICY ACT OF 1970	30 U.S.C. 21a	P.L. 91-631
NATIONAL ADVISORY COMMITTEE ON OCEANS AND ATMOSPHERE ACT OF 1977	33 U.S.C. 857-13-857-18	P.L. 95-063
NATIONAL CRITICAL MATERIALS ACT OF 1984		P.L. 98-373 (TITLE II)

OCS Laws, continued.

TITLE	CITATION	PUBLIC LAW
NATIONAL ENVIRONMENTAL POLICY ACT OF 1969 (NEPA)	42 U.S.C. 4321-4347	P.L. 91-190
NATIONAL FISHING ENHANCEMENT ACT OF 1984		P.L. 98-623 (TITLE II)
NATIONAL HISTORIC PRESERVATION ACT, AUTHORIZATION		P.L. 98-483
NATIONAL HISTORIC PRESERVATION ACT	16 U.S.C. 470-470w6	P.L. 89-665
NATIONAL MATERIALS AND MINERALS POLICY RESEARCH AND DEVELOPMENT ACT OF 1980	30 U.S.C. 1601-1605	P.L. 96-479
NATIONAL OCEAN POLLUTION PLANNING ACT OF 1978	33 U.S.C. 1701-1709	P.L. 95-273
NATURAL GAS ACT	15 U.S.C. 717-717w	52 Stat 821
NATURAL GAS PIPELINE SAFETY ACT OF 1968	49 U.S.C. 1671-1686	P.L. 90-481
NATURAL GAS PIPELINE SAFETY ACT OF 1968 AND HAZARDOUS LIQUID PIPELINE SAFETY ACT OF 1979, AUTHORIZATIONS & AMENDMENT		P.L. 98-464
NATURAL GAS POLICY ACT OF 1978	15 U.S.C. 3301-3432	P.L. 95-621
OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970	29 U.S.C. 651-678	P.L. 91-596
OUTER CONTINENTAL SHELF LANDS ACT	43 U.S.C. 1331-1356	P.L. 83-212
OUTER CONTINENTAL SHELF LANDS ACT AMENDMENTS OF 1978	43 U.S.C. 1801-1866	P.L. 95-372
OUTER CONTINENTAL SHELF LANDS ACT AMENDMENTS OF 1978 (FISHERMEN'S CONTINGENCY FUND, AMENDMENTS)		P.L. 98-498 (TITLE IV B)
PAPERWORK REDUCTION ACT OF 1980	44 U.S.C. 3501-3520	P.L. 96-511
POLICY OF THE U.S. WITH RESPECT TO THE NATURAL RESOURCES OF THE SUBSOIL AND SEABED OF THE CONTINENTAL SHELF	PROC. 2667	
PORTS AND WATERWAYS SAFETY ACT OF 1972	33 U.S.C. 1221-1232	P.L. 92-340
REGULATORY FLEXIBILITY ACT	05 U.S.C. 601-612	P.L. 96-354
REGULATORY PLANNING PROCESS, JANUARY 4, 1985	E.O. 12498	
RIVERS & HARBORS APPROPRIATION ACT OF 1899	33 U.S.C. 401-687	30 Stat 1151
STRATEGIC AND CRITICAL MATERIALS STOCKPILING ACT	50 U.S.C. 98-98b-4	P.L. 96-041
SUBMERGED LANDS ACT	43 U.S.C. 1301-1315	P.L. 83-031
TRANS ALASKAN PIPELINE AUTHORIZATION ACT	43 U.S.C. 1651-1655	P.L. 93-153
TRANSFER OF FUNCTIONS RELATING TO FINANCIAL RESPONSIBILITY OF VESSELS FOR POLLUTION LIABILITY, MAY 5, 1983	E.O. 12418	
WITHDRAWAL OF LANDS FOR DEFENSE PURPOSES ACT	43 U.S.C. 155-158	P.L. 85-337

Source: OCS Laws: Related to Mineral Resource Development on the Outer Continental Shelf. Minerals Management Service. OCS Report 85-0069. Washington, D.C. 1985

APPENDIX B

EXAMPLES OF LEASE SALE STIPULATIONS

This appendix contains a composite of typical lease sale stipulations for the main categories of stipulations. They are selected from sales discussed in this report and highlighted on Table 2.4.

1. Protection of Archaeological/Cultural Resources (Sale 53, Stipulation 2)

If the DCMOFO, having reason to believe that a site, structure, or object of historical or archaeological significance, hereinafter referred to as a "cultural resource," may exist in the lease area, gives the lessee written notice that the lessor is invoking the provisions of this stipulation, the lessee upon receipt of such notice shall comply with the following requirements.

Prior to any drilling activity or the construction or placement of any structure for exploration or development on the lease, including but not limited to well drilling and pipeline and platform placement, hereinafter in this stipulation referred to as "operation," the lessee shall conduct remote sensing surveys to determine the potential existence of any cultural resource that may be affected by such operations. All data produced by such remote sensing surveys as well as other pertinent natural and cultural environmental data shall be examined by a qualified marine survey archaeologist to determine if indications are present suggesting the existence of a cultural resource that may be adversely affected by any lease operation. A report of this survey and assessment prepared by the marine survey archaeologist shall be submitted by the lessee to the DCMOFO and the Manager for review.

If such cultural resource indicators are present, the lessee shall: (1) locate the site of such operation so as not to adversely affect the identified location; or (2) establish, to the satisfaction of the DCMOFO, on the basis of further archaeological investigation conducted by a qualified marine survey archaeologist or underwater archaeologist using such survey equipment and techniques as deemed necessary by the DCMOFO, either that such operation shall not adversely affect the location identified or that

the potential cultural resource suggested by the occurrence of the indicators does not exist.

A report of this investigation prepared by the marine survey archaeologist or underwater archaeologist shall be submitted to the DCMOFO and the Manager for their review. Should the DCMOFO determine that the existence of a cultural resource which may be adversely affected by such an operation is sufficiently established to warrant protection, the lessee shall take no action that may result in an adverse effect on such cultural resources until the DCMOFO has given directions as to its preservation.

The lessee agrees that if any site, structure, or object of historical or archaeological significance should be discovered during the conduct of any operations on the leased area, he shall report immediately such findings to the DCMOFO and make every reasonable effort to preserve and protect the cultural resource from damage until the DCMOFO has given directions as to its preservation.

2. Protection of Biological Resources (Sale 92, Stipulation 3)

If biological populations or habitats which may require additional protection are identified by the Regional Supervisor, Field Operations (RSFO), on any lease, the RSFO may require the lessee to conduct biological surveys to determine the extent and composition of such biological populations or habitats. The RSFO shall give written notification to the lessee of the RSFO's decision to require such surveys.

Based on any surveys which the RSFO may require of the lessee or on other information available to the RSFO on special biological resources, the RSFO may require the lessee to: (1) relocate the site of operation; (2) establish either that such operation will not have a significant adverse effect upon the resource identified or that a special biological resource does not exist; (3) operate during those periods of time, as established by the RSFO, that do not adversely affect the biological resources and/or (4) modify operations to ensure that significant biological populations or habitats deserving protection are not adversely affected.

If any area of biological significance should be discovered during the conduct of any operations on the lease, the lessee shall immediately

report such findings to the RSFO and make every reasonable effort to preserve and protect the biological resource from damage until the RSFO has given the lessee direction with respect to its protection.

The lessee shall submit all data obtained in the course of biological surveys to the RSFO with the locational information for drilling or other activity. The lessee may take no action that might affect the biological populations or habitats surveyed until the RSFO provides written directions to the lessee with regard to permissible actions.

3. Fisheries/Wildlife Training Program/Orientation (Sale 80, Stipulation 7)

The lessee shall include in its exploration and development plans, submitted under 30 CFR 250.34, a proposed fisheries and wildlife training program for review and approval by the Regional Manager. The training program shall be for all personnel involved in exploration, development, and production operations, and for platform and shorebased supervisors. The purpose of the training program shall be to familiarize persons working on the project of the value of the commercial fishing industry, the methods of offshore fishing operations, the potential conflicts between fishing operation and offshore oil and gas activities, the locations of marine mammal and bird rookery sites in the area, the locations of gray whale and other endangered whale migration routes in the area, the seasonal abundance and sensitivities of these animals to disturbance and the Federal laws that have been established to protect endangered and threatened species from harassment or injury. Additionally, the lessee shall include in the training program required above, information on the behavior of gray whales migration and how to avoid conflicts with this migration. The program shall be formulated and implemented by qualified instructors.

4. Wellhead/Pipeline Design to Avoid Conflict with Fishing (Sale 80, Stipulation 6)

(a) *Wells.* Subsea wellheads and temporary abandonments, or suspended operations that leave protrusions above the sea floor, shall be protected, if feasible, in such a manner as to allow commercial trawl gear to pass over the structure without snagging or otherwise damaging the

structure or the fishing gear. Latitude and longitude coordinates of these structures, along with water depths, shall be submitted to the Regional Manager. The coordinates of such structures will be determined by the lessee utilizing state-of-the-art navigation systems with the accuracy of at least ± 50 feet at 200 miles.

(b) *Pipelines.* All pipelines, unless buried, including gathering lines, shall have a smooth-surface design. In the event that an irregular pipe surface is unavoidable due to the need of valves, anodes, or other structures, those irregular surfaces shall be protected in such a manner as to allow trawl gear to pass over the object without snagging or otherwise damaging the structure or the fishing gear.

5. Operational Controls, Electromagnetic Emissions, and Evacuation (Military 1) (Sale 53, Stipulation 4)

(a) The lessee agrees that prior to operating or causing to be operated on its behalf boat or aircraft traffic into individual, designated warning areas, the lessee shall coordinate and comply with instructions from the Commander, Western Space and Missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTTC), and the Commander, Fleet Area Control and Surveillance Facility (FACSFAC), or other appropriate military agency. Such coordination and instruction will provide for positive control of boats and aircraft operating in the warning areas at all times.

(b) The lessee, recognizing that mineral exploration and exploitation and recovery operations of the leased areas of submerged lands can impede tactical military operations, hereby recognizes and agrees that the United States reserves and has the right to temporarily suspend operations of the lessee under this lease in the interests of national security requirements. Such temporary suspension of operations, including the evacuation of personnel, and appropriate sheltering of personnel not evacuated (an appropriate shelter shall mean the protection of all lessee personnel for the entire duration of any Department of Defense activity from flying or falling objects or substances), will come into effect upon the order of the DCMOFO, after consultation with the Commander, Western Space and Missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTTC), and the Commander, Fleet Area Control and Surveillance Facility (FACSFAC), or other appropriate military agency, or

higher authority, when national security interests necessitate such action. It is understood that any temporary suspension of operations for national security may not exceed seventy-two hours; however, any such suspension may be extended by order of the DCMOFO. During such periods equipment may remain in place.

(c) The lessee agrees to control his own electromagnetic emissions and those of his agents, employees, invitees, or independent contractors or subcontractors emanating from individual, designated defense warning areas in accordance with requirements specified by the Commander, Western Space and Missile Center (WSMC), the Commander, Pacific Missile Test Center (PMTTC), or other appropriate military agency, to the degree necessary to prevent damage to, or unacceptable interference with Department of Defense flight, testing or operations activities conducted within individual, designated warning areas. Necessary monitoring, control, and coordination with the lessee, his agents, employees, invitees, independent contractors or subcontractors, will be effected by the Commander of the appropriate onshore military installation conducting operations in the particular warning area: provided, however, that control of such electromagnetic emissions shall permit at least one continuous channel of communication between a lessee, its agents, employees, invitees, independent contractors or subcontractors, and onshore facilities.

6. Hold Harmless (Military 2) (Sale 80, Stipulation 4)

Whether or not compensation for such damage or injury might be due under a theory of strict or absolute liability or otherwise, the lessee assumes all risks of damage or injury to persons or property which occurs in, on, or above the Outer Continental Shelf, to any person or persons or to any property of any person or persons who are agents, employees, or invitees of the lessee in, on, or above the Outer Continental Shelf, if such injury or damage to such person or property occurs by reason of the activities of any agency of the U.S. government, its contractors or subcontractors, or any of their officers, agents, or employees, being conducted as a part of, or in connection with, the programs and activities of the Western Space and Missile Center, the Pacific Missile Test Center, or other appropriate military agency.

Notwithstanding any limitations of the lessee's liability in section 14 of the lease, the lessee assumes the risk whether such injury or damage is caused in whole or in part by any act or omission, regardless of negligence or fault, of the United States against all claims for loss, damage, or injury sustained by agents, employees, or invitees of the lessee, its agents, or any independent contractors or subcontractors doing business with the lessee in connection with the programs and activities of the aforementioned military installations and agencies, whether the same be caused in whole or in part by the negligence or fault of the United States, its contractors or subcontractors, or any of their officers, agent, or employees and whether such claims might be sustained under theories of strict or absolute liability or otherwise.

7. Geohazards Identification (Sale 42, Stipulation 5)

(The lease for the following tract will include this stipulation, which will apply only to operation within the designated portion of this tract: 42-43, NW1/4, N1/2SW1/4.)

Portions of this tract may contain a shallow "bright spot" seismic amplitude anomaly which may be indicative of a shallow gas deposit. Surface occupancy above this anomaly and drilling through the anomaly will not be allowed unless or until the lessee has demonstrated to the Supervisor's satisfaction that a potentially hazardous accumulation of shallow gas does not exist or that exploratory drilling operations, structures (platforms), casing and walls -- can be placed, or drilling plans designed to assure safe operations in the areas above the anomaly. This may necessitate that all exploration for and development of oil and gas be performed from locations outside the area of concern, either within or outside the lease block.

8. Transportation of Hydrocarbon Products by Pipeline (Sale 80, Stipulation 5)

(a) Pipelines will be required: (1) if pipeline rights of way can be determined and obtained; (2) if laying of such pipelines is technologically feasible and environmentally preferable; and (3) if, in the opinion of the lessor, pipelines can be laid without net social loss, taking into account any

incremental costs of pipelines over alternative methods of transportation and any incremental benefits in the form of increased environmental protection or reduced multiple-use conflicts. The lessor specifically reserves the right to require that any pipeline used for transporting production to shore be placed in certain designated management areas. In selecting the means of transportation, consideration will be given to any recommendation of the Pacific Regional Technical Working Group with the participation of federal, state, and local governments and the industry.

(b) Following the development of sufficient pipeline capacity, no crude oil production will be transported by surface vessel from offshore production sites, except in the case of emergency. Determinations as to emergency conditions and appropriate responses to these conditions will be made by the Regional Manager.

(c) Where the three criteria set forth in the first sentence of this stipulation are not met and surface transportation must be employed, all vessels used for carrying hydrocarbons to shore from the leased area will conform with all standards established for such vessels, pursuant to the Ports and Waterways Safety Act of 1972 as amended (33 U.S.C. 1221, et seq.).

9. Disposal of Drilling Discharges (Muds, Cutting Production Waters)
 (Sale 105, Stipulation 2; Sale 57, Stipulation 8; Sale 80, Stipulations 13 and 14)

Sale 105, Stipulation No. 2—Protection of Topographic Features.
 (This stipulation will be included in leases located in the areas so indicated on maps 1 and 3 described in paragraph 12. The topographic features with their appropriate "no activity" isobaths are listed below.)

<u>Bank Name</u>	<u>Isobath(meters)</u>
Mysterious Bank ¹	74,76,78, 80,84
Blackfish Ridge ¹	70
Dream Bank ²	78,82
Southern Bank ²	80
Hospital Bank ²	70
North Hospital Bank ²	68
Arkansas Bank ²	70

<u>Bank Name</u>	<u>Isobath(meters)</u>
South Baker Bank ²	70
Baker Bank ²	70
Big Dunn Bar ¹	65
Small Dunn Bar ¹	65
32 Fathom Bank ¹	52
Stetson Bank	62
Claypile Bank ¹	50
Applebaum Bank	85
Coffee Lump ¹	Various
West Flower Garden Bank ⁴ (defined by 1/4, 1/4, 1/4 system)	100
East Flower Garden Bank ⁴ (defined by 1/4, 1/4, 1/4 system)	100
MacNeil Bank	82
29 Fathom Bank	64
Rankin Bank	85
Geyer Bank	85
Elvers Bank	85
Bright Bank ³	85
McGrail Bank ³	85
Rezak Bank ³	85
Sidner Bank ³	85
Parker Bank ³	85

¹ Low relief banks - only paragraph (a) of the stipulation applies.

² Other South Texas banks - paragraphs (a) and (b) of the stipulation apply; in addition, paragraph (c)(1) shall apply for production and development operations only.

³ Central Gulf of Mexico bank with a portion of its "1 Mile Zone" and/or "3 Mile Zone" in the Western Gulf of Mexico.

⁴ Flower Garden bank - have a "4 Mile Zone" rather than a "3 Mile Zone" in the "1 Mile Zone," paragraph (c)(2) of the stipulation shall apply in addition to paragraph (b); in the "4 Mile Zone," only paragraph (b) shall apply.

(a) No structures, drilling rigs, pipelines, or anchoring will be allowed within the listed isobath ("No Activity Zone") of the banks as listed above.

(b) Operations within the area shown as "1 Mile Zone" shall be restricted by shunting all drill cuttings and drilling fluids to the bottom through a downpipe that terminates an appropriate distance, but no more than 10 meters, from the bottom.

(c) Operations within the area shown as "3 Mile Zone" shall be restricted as specified in either (1) or (2) below at the option of the lessee.

(1) All drill cuttings and drilling fluids must be disposed of by shunting the material to the bottom through a downpipe that terminates an appropriate distance, but no more than 10 meters, from the bottom.

(2) The operator (lessee) shall submit a monitoring plan. The monitoring plan will be designed to assess the effects of oil and gas exploration and development operations on the biotic communities of the nearby banks.

The monitoring program shall indicate that the monitoring investigations will be conducted by qualified, independent scientific personnel and that these personnel and all required equipment will be available at the time of operations. The monitoring team will submit its findings to the Regional Director of imminent danger to the biota of the bank resulting directly from drilling or other operations. If it is decided that surface disposal of drilling fluids or cuttings present no danger to the bank, no further monitoring of that particular well or platform will be required. If, however, the monitoring program indicates that the biota of the bank is being harmed, or if there is a great likelihood that operation of that particular well or platform may cause harm to the biota of the bank, the RD shall require shunting as specified in (1) above or other appropriate operational restrictions.

Sale 57, Stipulation No. 8

In the event of production, discharge of produced waters into open or ice-covered water areas of less than 10 meters is prohibited, unless the RS determines, with the concurrence of the State of Alaska, that such produced waters are non-polluting, in the following tracts: 57-350 through 57-358, 57-365, 57-366, and 57-374 through 57-377.

The following restrictions apply on all tracts: the discharge of oil-based or oil contaminated drilling muds and/or cuttings into the marine environment is prohibited. The discharge of non-oil-contaminated drilling muds and cuttings shall be consistent with National Pollutant Discharge Elimination System (NPDES) permit conditions.

Sale 80, Stipulation No. 13--Protection of Marine Biota

All drilling muds discharged from exploration and development and production operations must contain only those components approved by the U.S. Environmental Protection Agency in accordance with National Pollutant Discharge Elimination System permits issued for this lease.

When drilling fluid discharges are proposed within 1,000 meters of Areas of Special Biological Significance, a National Marine Sanctuary, or other sensitive areas as determined by the Regional Manager, the lessee shall include the results of a drilling fluids dispersion model for anticipated discharges in a Plan of Exploration or Development/Production.

Sale 80, Stipulation No. 14--Disposal of Drilling Discharges

(This stipulation will be included in leases issued on the following blocks; not listed.)

The Regional Manager (RM) may require the lessee to modify muds and cutting discharge operations or transport the material to disposal sites approved by the U.S. Environmental Protection Agency (EPA). After

consultation with the EPA, the RM shall determine the method of disposal based upon review of the data obtained from the surveys and studies established pursuant to Stipulation 1 and from other relevant sources of information.

10. Testing of Oil Spill Containment Equipment (Sale 92, Stipulation 6)

The lessee shall conduct semiannual full-scale drills at the request of the lessor for production platforms and operator-controlled contracted cleanup vessels for deploying equipment in open water to test the equipment and the contingency plan. These drills must involve all primary equipment identified in the oil spill contingency plans as primary equipment controlled and operated by the appropriate cooperative. These drills will be unannounced and held under realistic environmental conditions in which deployment and operations can be accomplished without endangering safety of personnel. Representatives of the U.S. Coast Guard, Minerals Management Service, and State of Alaska may be present as observers. The lessor's inspectors will frequently inspect oil and gas facilities where oil spill containment and cleanup equipment are maintained in order to assure readiness.

11. Avoiding Hazardous Material (Explosives, Toxics, Radioactive Matter) (Sale 76, Stipulation 7)

This stipulation will apply to the following blocks which have been identified, in conjunction with Sale No. 59, as having potential for undetonated explosives: Official Protraction Diagram No. NJ 18-3, blocks 905-911, 949-952, 954, and 993-997; Official Protraction Diagram No. NJ 18-6, blocks 25-28, 69-71, 113, 114, and 157. In addition, this stipulation may apply to other blocks in the Sale No. 76 area with a high probability of containing undetonated explosives or radioactive wastes. Any additional blocks will be listed in the final notice of sale.

If the RS believes any undetonated explosives or radioactive materials may exist in the lease area, the lessee shall conduct surveys as specified by the RS to determine the location of any such materials. Upon

completion of such surveys, the lessee shall forward a report and all pertinent data to the RS for review. Should the RS determine that the existence of undetonated explosives or radioactive materials may adversely affect any activity or operation, such as the construction or placement of any structure for exploration or development on the lease, or pose an environmental hazard such as the release of radioactive materials from drums or canisters, the lessee shall take no action until the RS has given directions as to the conduct of that operation.

12. Protection of Important Biological Resources (Sale 80, Stipulation 9)

(The following part of this stipulation will be included on leases issued on blocks listed under (i) and (ii) below:)

- (i) OCS Leasing Map No. 6A, Channel Islands
lists tracts (omitted)
OCS Leasing Map No. 6B, Channel Islands
lists tracts (omitted)
- (ii) OCS Leasing Map No. 6D, Channel Islands
lists tracts (omitted)
OCS Leasing Map No. 6E, Channel Islands
lists tracts (omitted)
Official Protraction Diagram NI 11-10,
San Clemente
map of tracts (omitted)

(a) The lessee shall be required to maintain state-of-the-art oil spill containment and cleanup equipment (in accordance with the requirements of the previously agreed upon U.S. Coast Guard (USCG) Notice No. 5740) onsite and in the vicinity of exploratory drilling and development and production operations. In addition, suitable means of deployment and personnel trained in deployment and use of this equipment must be available. Such deployment for exploration, development, and production operations shall have the capability of immediate initiation of oil spill containment and cleanup.

(The following part of this stipulation will be included in leases issued on blocks listed under (i) above:)

(b) In the case of spills larger than can be contained by equipment on exploration vessels or production platforms, the lessee shall maintain state-of-the-art equipment on the vessels which, based on the proximity to the Channel Islands national Marine Sanctuary, are capable of responding to a request for assistance and being on the scene within 2 to 4 hours of the request if local conditions permit. The lessee shall install on exploration vessels and production platforms real-time monitoring capability to assist the USCG in acquiring meteorological and oceanographic data necessary to make accurate predictions of the trajectory of oil spills. This information shall support oil spill containment and cleanup operations. When a spill greater than 1 barrel occurs, the lessee shall notify the California Office of Emergency Services within 24 hours of such a spill.

(The following part of this stipulation will be included in leases issued on blocks listed under (ii) above:)

(c) Development and production operations will be required to include the capability to automatically detect the loss of oil and gas at any time.

13. Protection of Commercial Fisheries (Sale 92, Stipulation 7)

(a) The lessee, operator(s), subcontractor(s), and all personnel involved in exploration, development, and production operations shall endeavor to minimize conflicts between the oil and gas industry and the commercial fishing industry.

Prior to submitting a plan of exploration or development to the lessor, appropriate industry personnel shall contact potentially affected commercial fishermen or recognized fishing organizations like United Fishermen of Alaska, Bering Sea Fishermen's Association, and Oil/Fisheries Group of Alaska to discuss potential conflicts with the siting, timing, and methods proposed. Through this consultation, the lessee shall assure that, whenever feasible, exploratory and development activities are compatible with seasonal fishing operations and will not result in undue interference with commercial fishing from important fishing grounds.

A discussion of the resolutions reached during this consultation process and a discussion of any unresolved conflicts shall be included in the

Plan of Exploration or Development/Production. The lessee shall send a copy of the Plan of Exploration or Development/Production to the Oil/Fisheries Group of Alaska, United Fishermen of Alaska, and major fisheries organizations in the area at the same time as they are submitted to the lessor to allow concurrent review and comment as part of the lessor's plan approval process.

(b) In particular, the lessee shall show in the Plan of Exploration or Development/Production crew and supply boat operation routes which will be used to minimize impacts to commercial fishing, marine mammals, and endangered and threatened species. Conflicts foreseen in the planning stages or that develop later shall be resolved whenever feasible and as quickly as possible.

(c) The lessee also shall include in the Plan of Development/Production analyses of the effects of its operations on the allocation and use of local dock space by fishing boats and crew and supply boats. These analyses shall include present (baseline) uses, predicted oil and gas uses which increase the level of demand, and an assessment of individual and cumulative impacts. Conflicts foreseen in the planning stages or that develop later shall be resolved whenever feasible and as quickly as possible.

(d) All activities associated with exploration and development operations shall be conducted to minimize the creation of obstacles to commercial fishing operations. If the Regional Supervisor, Field Operations, has reason to believe that the site has not been adequately cleared, additional surveys shall be required to detect the location of any obstacles to commercial fishing.

14. Protection of Air Quality (Sale 80, Stipulation 17)

Lessees shall comply with the following requirements until the Minerals Management Service completes rulemaking procedures concerning air quality regulations applicable to oil and gas operations on the Outer Continental Shelf off California. Any revisions to the current air quality rules will be applied to all exploratory and development/production operations on leases issued as a result of this sale.

15. Requiring Onshore Oil Processing (Sale 80, Stipulation 11)

Any initial processing oil will be conducted at an onshore facility, if feasible, subject to the granting of necessary permits by local authorities within a reasonable period of time as provided for in State of California law. If after review by local and State authorities these permits cannot be acquired, then the Regional Manager shall determine, in cooperation and participation with the State, what further action needs to be taken in regard to the lessee's development and production plan. Exceptions to the initial onshore processing include standard oil/gas/water separation processes and necessary treatment of oil prior to being pumped from the platform into a pipeline to shore, if pipeline transport is determined practicable.

16. Distance from Shore/Camouflage (Sale 35, Stipulation) (See also category 17 below)

List of Tracts (omitted)

In the approval of exploration and development plans, including the installation of platforms, the Supervisor shall require the lessee to camouflage all structures by appropriate painting.

17. Unitization Agreement Requirement (Sale 71, Stipulation 10; Sale 53, Stipulation 10)

Sale 71, Stipulation 10

(To be included in all leases on tracts 71-340, 71-350, and 71-351.)

This lease is subject to the "Agreement Regarding Unitization for the Outer Continental Shelf Oil and Gas Lease Sale 71 between the United States and the State of Alaska," and the lessee is bound by the terms of that agreement.

Sale 53, Stipulation 10

(1) No producing well may be drilled where the well bore in the producing intervals is closer to the seaward boundary of the State of California than the distance agreed to between the State and the Department based on analysis of pertinent site-specific data, except that in no event shall the agreed distance be further than 750 feet from the seaward boundary of the State. In the absence of an agreed distance, no well shall be drilled closer than 500 feet to the seaward boundary of the State.

(2) The constraint in paragraph (1) shall not apply:

(a) If oil or gas pools or fields underlying both the Outer Continental Shelf and lands subject to the jurisdiction of California are included in a production unit entered into by the relevant lessees and approved by the lessors, or in a production unit entered into by the Federal lessee and the State of California when it is a carried, non-operating owner.

(b) If, in the absence of a production unit as described in (a) above, the State of California permits production from state lands from a point closer than 750 feet from the federal-state boundary. In the event that such production from State lands does occur, the federal lessee shall be allowed to produce from offset wells equally close to the boundary in the area of Federal jurisdiction.

18. Adjustments of Royalty Rates (Sale 42, Stipulation 7)

(To be included in any leases resulting from this sale for the sliding scale royalty tracts listed in paragraph 4 of this notice.)

(a) The royalty rate on production saved, removed, or sold from this lease is subject to consideration for reduction under the same authority that applies to all other oil and gas leases on the Outer Continental Shelf ((30 CFR, 250.12(e)). The Director, Geological Survey, may grant a reduction for only one year at a time. Reduction of royalty rates will not be approved unless production has been underway for one year or more.

(b) Although the royalty rate specified in Sec. 6(a) of this lease or as subsequently modified in accordance with applicable regulations and

stipulations is applicable to all production under this lease, not more than 16-2/3 percent of the production saved, removed, or sold from the lease area may be taken as royalty on amount, except as provided in Sec. 15(d) of this lease; the royalty on any portion of the production, saved, removed, or sold from the lease in excess of 16-2/3 percent may only be taken in value of the production saved, removed, or sold from the lease area.

19. Other. (Sale 80, Stipulation 15)

Stipulation No. 15--Suspension of Operations

(This stipulation will be included in the leases issued for the following blocks in water depths of 400-900 meters.)

List of Tracts (omitted)

The Director shall suspend or temporarily prohibit production or any other operation or activity pursuant to this lease if such suspension or cessation of operations or activities is necessary to complete operations or activities described in a development and production plan approved by the Regional Manager pursuant to 30 CFR part 250.34.

APPENDIX C: CASE STUDIES

ARCO'S COAL OIL POINT PROJECT

The objective of examining the Coal Oil Point Project (COPP) is to identify the issues raised in the application process and environmental review of the potential impacts of offshore oil and gas development on a nearby community. The goal of highlighting the COPP process is to document the Santa Barbara experience so it may be used by other state and local governments that face nearshore oil and gas development projects.

This case study illustrates the convoluted process an oil and gas development project can undergo. ARCO's proposed project changed considerably from its initial concept for development in 1977 to the time its environmental review was completed in 1987 at a cost of more than \$6 million. The process documents how intergovernmental relations, corporate posturing, technological choices, regulatory options, global markets, public participation, and a changing political climate can all influence the final outcome of an offshore oil and gas project.

ARCO TESTS STATE WATERS

If the proposed ARCO COPP is approved it will end a 19-year moratorium imposed by the State Lands Commission on any new offshore oil platforms within the state's 3-mile jurisdiction. The industry sees the ARCO project off Coal Oil Point as the test case that could establish the ground rules for further development of State leases.

One of the three proposed oil and gas platforms (under ARCO's preferred alternative), platform Heron, is to be located about two miles offshore directly adjacent to University of California Santa Barbara

(UCSB) campus and the neighboring college community of Isla Vista. Of all aspects of the project, the proposed siting of this platform has created the greatest opposition. Many residents believe this large "industrial factory" placed adjacent to a residential community defies sound logic and planning. However, there are many other issues that revolve around the COPP that add to the controversy and the dilemma of permitting a development of this magnitude at this time.

BACKGROUND

The history of ARCO's Coal Oil Point Project can be traced to the early years of oil development in the Santa Barbara area. The entire context and scale of oil development in the area changed with the discovery of the Ellwood field in 1929. The Ellwood field (now leased by ARCO), located just two miles offshore of Coal Oil Point, proved to be one of the biggest and richest fields yet discovered in California. Production from the Ellwood and the nearby Capitan fields glutted the market, which resulted in the State's closing all tidelands to further leasing. Further leasing in the area was limited due to uncertainty of rights of lessors until 1953 when Congress passed the Submerged Lands Act which vested in the state the title to all submerged lands out to the 3-mile limit.

The Cunningham-Shell Tideland Act of 1955 revised the 1938 State Lands Act which had created the State Lands Commission (SLC) to regulate all state submerged lands as well as permit offshore leasing. This Act also created a State oil and gas sanctuary 16 miles in length stretching from the boundary of ARCO's lease 309 at Goleta Point to Summerland on the east, thereby protecting the coastline of the City of Santa Barbara, Montecito, and Goleta Valley from any oil and gas development within the State's 3-mile territorial sea. These sanctuaries are essentially "political animals" in that they represent public choices to prohibit development in these areas, but are not based on any compelling biological data or environmental mandates.

STATE LEASE SALES

By 1966, with the exception of the 16-mile sanctuary, the State had leased all its tidelands within the Santa Barbara County boundaries. The

state leases are much smaller than federal lease tracts offered for OCS activities. All five leases which ARCO proposes to develop were issued in either the 1940s or the 1960s (see attached Chronology). For these leases there were no real stipulations required by the State of California. There were, however, a few performance standards required for drilling and a few very general clauses regarding environmental protection. Prior to ARCO's COPP, all five lease tracts underwent exploration and production activities.

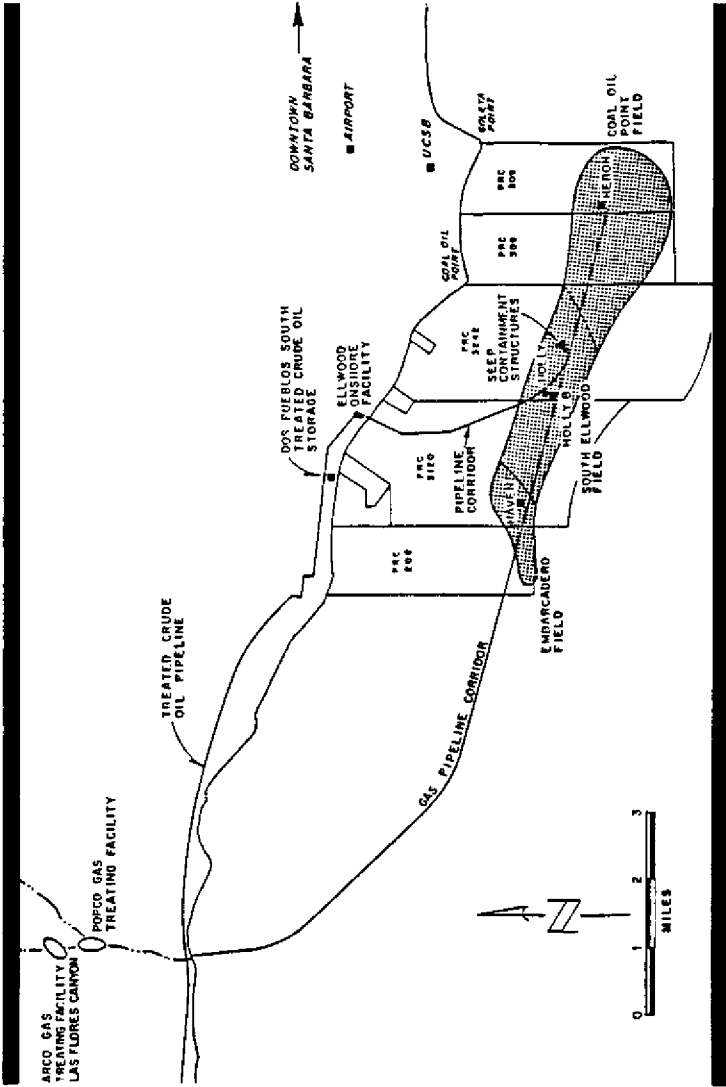
Soon after the famous January 29, 1969, blowout the State Lands Commission cancelled all drilling permits in State-owned tidelands. The Commission found that there was a lack of technology in providing reliable oil containment and clean-up on the part of the industry. Furthermore, the Commission believed that the standards imposed by the federal government were too lenient and the blowout would not have occurred under existing state standards for oil and gas development in State waters.

EXISTING FACILITIES

Currently ARCO produces some oil and gas from the South Ellwood Field by its existing Platform Holly. Platform Holly was erected in 1966, just two miles offshore, on lease 3242. Holly's oil and gas is processed at the Ellwood facility, and the treated oil is shipped via the Ellwood Marine Terminal. The Ellwood processing facility also handles sweet gas from ARCO's seep containment devices, receives electrical power, and re-injects produced water into onshore disposal wells. Present production is approximately 10,000 barrels of oil per day and about 10 million standard cubic feet of sour gas (containing toxic hydrogen sulfide) per day.

ARCO's Coal Oil Point Project (COPP) proposes developing oil and gas reserves on five separate but connecting leases. These include state leases PRC 208, PRC 3120, PRC 3242, PRC 308, and PRC 309. These five tracts are adjacent to the shoreline at Goleta and Coal Oil Point in Santa Barbara County. The Coal Oil Point Field, the Embarcadero field, and the South Ellwood Field are found within these leases (see Figure C.1). ARCO estimates that the recoverable reserves from these fields are between 200 and 300 million barrels of oil and between 200 and 500 billion standard cubic feet of natural gas.

Figure C.1 Coal Oil Point Project Area Map.



Source: ARCO, 1986.

HISTORY OF COPP PROPOSAL

Many options have been explored by ARCO and the interested agencies in order to accomplish the proposed production of the COPP. Indeed, ARCO's Coal Oil Point Project has gone through a complete metamorphosis during the application stages of the project. However, ARCO's existing Ellwood facility (currently an oil and gas processing plant), located near Coal Oil Point, has been the cornerstone for all of ARCO's proposed options for development.

ARCO began the proposed project with discussions with the SLC to resume exploratory drilling of leases 308 and 309 (the COP field) in 1977. However, the first application, a Preliminary Development Plan (PDP) for the COPP, was not submitted until December 1983. Prior to submittal, ARCO worked primarily with the SLC in formulating various options for the Coal Oil Point project. A State-level Joint Review Panel (JRP) was formed in September 1983, consisting of the County of Santa Barbara and the State Lands Commission, to coordinate the PDP and environmental review process. The JRP's first task was to select consultants to prepare the EIR. They chose the Chambers Group, Inc. (Chambers Consultants and Planners 1987).

With its partners, (Mobil and Aminoil - now Phillips), ARCO proposed in its first application to develop leases 308, 309, and 3242 from two double-platform complexes. Various revisions to the application were made in the following months while an Administrative Draft EIR was being completed.

In April 1985, well into the environmental review process, ARCO discovered additional oil and gas reserves within leases 208 and 3120 (Embarcadero Field). Reluctantly, on advice from the SLC staff, ARCO withdrew its application for revision to include changes to the project due to the new discovery. More than four months later, on August 3, after extensive revision, ARCO re-submitted its application to include another double-platform complex (Haven) to tap reserves that had been discovered in the Embarcadero Field. The expanded plan also proposed retrofitting the Ellwood facility for oil processing only, using Venadito Canyon or Las Flores Canyon for onshore gas processing, expanding the Dos Pueblos oil storage, increasing the number of onshore pipeline corridors, and expanding the use of the Ellwood marine terminal.

On August 27, the PDP was deemed incomplete by the JRP. The application was found to be inconsistent with existing and proposed county policies which would prevent expansion of the marine terminal or a new gas processing facility in Venadito Canyon. Pending County policy stated that only one marine terminal would be allowed (see Exxon case study) and all others would become non-conforming uses which would not be allowed to expand. Further, a recent consolidation policy required all new onshore facility sites be consolidated at either Las Flores Canyon or Gaviota.

ARCO was sent back to the drawing board two more times before the PDP was finally approved by the JRP six months later on January 8, 1986. In order for its application to be approved, ARCO had to drop its proposal for expanding the Ellwood marine terminal and the new Venadito gas processing facility. While all gas processing would now be done at Las Flores Canyon, ARCO still believed it could persuade the County to permit oil processing at the existing (but expanded) Ellwood facility. As will be seen, this was a point of contention between the County and ARCO until the final days of the project.

Learning the hard way, ARCO reassessed its approach of working primarily with the SLC, which was more supportive of ARCO's position. Beginning in mid-1986 ARCO began to communicate and negotiate more effectively with the County in order to resolve land use concerns.

ARCO'S PREFERRED ALTERNATIVE

Up to this point, ARCO had substantially altered its original PDP to placate the County and SLC over their concerns about impacts from the COPP. Now ARCO's preferred alternative was to develop the COPP leases by using three double-platform complexes. Each of the platforms is located approximately 2.2 miles offshore in state tideland waters. The three double-platform complexes, Heron, Holly B, and Haven would tap three oil and gas fields on five leases (see Figure C.1). Each platform complex would consist of two platforms (one drilling and one for production) located side by side, connected by a bridge. Each of these platforms would be about 180 feet long by 120 feet wide with two decks. The lower deck would be 50 feet above the water and the highest point, the top of the drilling derrick, would extend 250 feet from the water level.

The preferred alternative would also utilize offshore oil pipelines which would connect the three platforms and would terminate at the existing (but expanded) Ellwood facility for processing. Two supplemental oil storage tanks would be constructed nearby at Dos Pueblos South. Two new offshore gas pipelines would link the platforms with the proposed gas processing site at Las Flores Canyon and complete the COPP. The County was now satisfied with the proposal because it promoted the use of (commingled) pipelines over tankering, and it consolidated facilities at Las Flores Canyon.

It was during the review phase of the PDP, when UCSB, which has been an outspoken critic of the COPP, expressed concern over the platform complex concept due to its proximity to shore (and UCSB). Because of its opposition to the proposed platform complexes, UCSB hired the Battelle Petroleum Institute to assess ARCO's development alternatives for the project. The study looked at four alternatives and concluded that the single platform (conventional) offers the best safety margin and cost efficiency of the options considered. This study coincided with ARCO's internal re-evaluation of its PDP, which also suggested the single platform option as the best option to pursue. Thus, in May 1986, ARCO once again began redesigning the PDP to include three single combination drilling/production platforms instead of the three double complexes. This change was brought about mainly to improve visual aesthetics and other concerns expressed by the University, the County Board of Supervisors, and residents of Isla Vista. By this time, the project was undergoing intense scrutiny and mounting public opposition. ARCO believed these changes would lessen the project's impacts and expedite its approval.

JOINT REVIEW PANEL

When ARCO resubmitted its first application in August 1985, the JRP was expanded to include the U.S. Army Corps of Engineers because of the permits it issues. Because of the Corps involvement, the EIR was now expanded to fulfill the requirements of NEPA, thus becoming a joint EIR/EIS. The SLC still retained the "lead agency" status on the JRP and the County was deemed the "responsible agency." The JRP was assisted also by a task force of federal and state agencies which advised the Panel on technical and environmental issues that came up in the EIR/EIS. Agencies represented on the task force included UCSB, the California

Department of Fish and Game, the California Coastal Commission, California Department of Offshore Development, Department of Transportation, Regional Water Quality Control Board, Division of Oil and Gas, Highway Patrol, the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the Coast Guard. UCSB played an especially active role on the task force by attending the JRP's meeting and reviewing all of the documents prepared during the development of the EIR/EIS.

STATE/COUNTY CONCERNS

In the early days of the JRP process, the County and the State Lands Commission clashed frequently with one another due to personality conflicts and "turf" disputes. During the PDP process, it was evident that the SLC was actively pursuing development of the COPP. The County was being a little more cautious, but at this time did not want to stop the project. There was clearly a significant difference in the missions that the two agencies were pursuing. The SLC had a clear mandate to develop the state tidelands for economic revenues. On the other hand, the County tried to scale back the type of onshore facilities necessary for oil and gas development in order to protect local interests and environmental concerns. The County perceived the SLC as having an "engineer mentality," pursuing technical solutions to development over environmental protection. Conversely, the SLC staff were wary of the conditions that the County wanted to impose on onshore facilities.

Further complicating matters is the small amount of revenues derived by the county from offshore oil and gas development. The State receives up to 50% royalty from oil produced from state leases, which amounts to hundreds of millions of dollars per year. These royalties are used by the state to help administer the state's school system. By contrast, local communities receive only about \$200,000 per year. Thus, the County believes oil and gas development "is not a good deal locally" (Almy 1988). These differences resulted in the Governor's Office of Offshore Development undertaking the role of a mediator at JRP meetings in order to settle disputes between the County and SLC.

COMMINGLING AND CONSOLIDATION

The main issue between the County and the SLC concerned the County's proposed policy for consolidation of onshore facilities. The SLC feared such a policy could, essentially, put a ultimate "cap on production" by limiting the area and eventually the number of facilities that could be accommodated in the County. Moreover, the SLC was very concerned about commingling of pipelines to onshore facilities. The SLC maintained that it is very important for the State to know what production comes from what lease for proper metering of state royalties. The SLC feared the State might be vulnerable to being cheated out of its proper share of revenues by ARCO if commingling of oil in pipelines was allowed. To date there is not a proven technology for accurate metering of commingled oil from different leases.

The County, on the other hand, was pursuing commingling because it would reduce the number of pipelines needed, thus reducing environmental impacts in the nearshore and onshore environment. This was a dominant issue between both agencies, each taking very hardline positions. Prior to 1985, ARCO worked closely with the SLC responding primarily only to its questions and comments due to its pro-development stance.

THE EIR/EIS PROCESS

The EIR/EIS represents a three-year effort (at a cost of \$4.7 million) of detailed review by the staff of the SLC, Santa Barbara County, the Governor's Office of Offshore Development, and other state, local, and federal agencies. As a task force member and trustee agency, individual faculty members from UCSB played a critical role in the process by providing expertise and review of the document. Numerous other consultants in marine science, engineering, risk analysis, air quality modeling, and other fields were retained by the JRP to address special issues raised by ARCO's application.

The major decision-making tool available to the County has been the EIR process. The COPP EIR examined a number of alternatives to the proposed development. Some of these were analyzed to a level of detail sufficient for permitting, while evaluation of other alternatives were only cursory. In the past, use of the EIR identified mitigation measures

which are the basis for the County's and the State's general permit conditions for oil and gas development. However, in this EIR, there was a great deal of disagreement over the significance of many of the impacts examined in the document.

There was also much criticism of the DEIR document for a number of other reasons. The consultants were faulted for never addressing the concerns of the residents of the affected community, Isla Vista. Isla Vista is a densely populated college town of 18,000 and the community was not mentioned once in the draft document. Moreover, many interest groups believed that the EIR/EIS was too massive, cumbersome, and technical for the public to use, resulting in lower public participation in the review process.

UNIVERSITY CONCERNS

As mentioned earlier, the University and the community of Isla Vista would be the parties most affected by the proposed development. ARCO operations had been conducted in the area since its Holly platform went on line in 1966 and had always maintained good relations with the community.

Just prior to the COPP application, however, there were intermittent noxious odors coming from a joint industry barge operation at the existing Ellwood Marine terminal. During 1983 and 1984, thirty-eight separate incidents of nauseous odors related to the barge operations were noted by the caretaker at the Coal Oil Point (Ecological) Reserve, located just west of UCSB. In 1985, after a particularly bad plume drifted over the Reserve, the caretaker felt forced to move out due to the odors and uncertainty over potential health effects. Other "odor" incidents occurred around the campus community during these years. Some classes were cancelled due to drifting oil operation odors and an increasing number of student complaints were documented (Coon 1988). ARCO's initial response to these complaints was that the odors resulted from the natural seeps just offshore.

In the spring of 1985, after two years of complaints, a remedy was provided through a consensus agreement that was achieved over many meetings involving ARCO, UCSB, and the Santa Barbara County Air Pollution Control District. The University has not had any problems since

ARCO gained complete control of the operation in 1986. In fairness to ARCO, the original problem was caused by a subcontractor's improper maintenance of vapor recovery equipment on the barge. Nonetheless, it resulted in a case of bad public relations. The University contends that ARCO never took the problem seriously, which in the end cost ARCO its reputation of being a "good neighbor" (Coon 1988). Moreover, such incidents occurring in association with such a small scale operation increased concern of University officials over the ability of ARCO to handle potential problems from a much more extensive project.

PLATFORM HERON - OFFSHORE ENVIRONMENTAL IMPACTS

Aside from the odors, University opposition began to mount from the proposed siting of platform Heron directly offshore of the UCSB community. While all three proposed platforms present numerous problems and impacts, platform Heron (proposed for the Coal Oil Field on leases 308 and 309) presented greater impacts and generated more opposition than the other platforms. Therefore, the Heron platform will be the one used in the discussion of the adverse impacts and issues that arose from the proposed offshore developments.

The primary issues over the location of platform Heron involve economic and social impacts from the aesthetic degradation of the area; potential oil spill contamination; noise, odor, and air quality concerns; protection of the marine habitat for environmental, scientific, and commercial purposes; and interference with marine research and commercial fishing. But without a doubt, the greatest concern and opposition was from the visual impact Heron would have on the adjacent university community of Isla Vista. The public attended the EIR hearings in large numbers and stated their concerns about its effect on property values, businesses, tourism, and recreational activities. Platform Heron was seen as adversely affecting the community's future quality of life.

The University was also worried about visual effects that the nearby platform would have on recruiting new students and faculty. The University testified at many hearings about specific environmental impacts that could occur and jeopardize its marine teaching and research program. Of specific concern is Heron's proximity to the seawater intake for the University's marine labs. Additional siting concerns include potential impacts to a rare hard-bottom habitat which serves as a nursery and habitat

for many valuable commercial species (lobsters, halibut, prawns, and crabs). This area is used extensively for marine research and commercial fishing purposes. Other offshore impacts, not necessarily isolated to Heron, would include conflicts with fishermen over loss of fishing space, loss of habitat, and potential adverse impacts from pipeline protrusions, oil spills, disposals of drilling muds, cuttings and produced water.

In an unusual precedent the University of California took a public position opposing the entire project until a time when appropriate technology could be demonstrated to develop the resource without jeopardizing the University's interests. The University believed the only reasonable mitigation measure for platform Heron would be to deny the platform. ARCO, however, maintains that the proposed Heron location is the only site which can effectively tap the reserves of the COP field. Moreover, ARCO insists that the entire COPP would be economically infeasible without platform Heron. Most observers believe the project would have easily been approved if it were not for the Heron platform.

ONSHORE ENVIRONMENTAL IMPACTS

Onshore support facilities require considerable acreage of prime coastal lands that are highly valued for its recreational and aesthetic uses. The development of onshore facilities also present a direct threat to the coastal environment. The EIR/EIS identified 30 Class I significant environmental impacts for the onshore components of the Ellwood project alone. One of the major impacts identified by the environmental review was the risk of fire, explosions or the release of toxic gas at the processing facilities. Hazard footprints for the proposed facilities were determined which found little potential for affecting the neighboring Isla Vista community. Many of the other impacts outlined in the EIR/EIS were the direct environmental consequences of construction of the pipelines and facilities, many of which could be mitigated to a lesser impact. The EIR/EIS also identifies socioeconomic impacts of the proposed project. This is important for the county because it outlines the demand required for local expenditures necessary for new roads, housing, schools, and fire and police protection generated by development.

AIR QUALITY

Much of the emphasis in the county's permitting process has centered on protection of air quality levels in the Santa Barbara basin. Air quality issues are extremely important in Santa Barbara because the Santa Ynez Mountains run parallel to the coastline and often trap smog (inversions) that have resulted in the County's being a federal non-attainment air quality area.

Santa Barbara's 1982 Air Quality Attainment Plan (AQAP) did not anticipate the levels of offshore oil and gas development now under way. Furthermore, the County has had a great deal of uncertainty in trying to calculate the impacts and costs of air pollution from oil and gas development.

A Class 1 impact is defined as a significant impact, not mitigatable to insignificant levels; however, to receive a permit from the Air Quality Pollution Control District (AQCD), air quality impacts must be mitigated. Under the regulations for the AQCD which issues rules and regulations for an air permit, "a net air quality benefit to the area must be shown, or the project will not be approved." In a nutshell, the permitting of the COPP must, by law, result in a reduction of emissions and a positive effect on air quality. ARCO proposes to do this by using offsets acquired from the Seep Containment Project it installed in the late 1970's. The seep control project initiated by ARCO at a cost of over \$8 million is engineered to trap natural hydrocarbon emissions (seeps) from a fault in the ocean floor. These emissions account for about 25% of the County's air pollution problem (Kallman and Wheeler 1984). ARCO has also proposed removal of the Ellwood Marine Terminal and removal of its gas processing at the Ellwood facility to receive the additional offsets required for the COPP.

MITIGATION MEASURES AND CONDITIONS

As a result of permitting numerous offshore oil and gas development projects, the County has become sophisticated in its use of mitigation measures and programs to eliminate or reduce project-specific and/or cumulative impacts. As Rob Almy, Director of the Energy Division, likes to point out, the "county has a history reaching above its jurisdictions to protect the local interests." While the industry resists many of the conditions imposed on a development, an ARCO official believes

that the "mitigation measures are the only way to improve county benefits to a project." The process reveals that the staff of both agencies and ARCO engaged in a continual learning process.

Because the COPP has not been approved at this time, various mitigation measures have not been formalized. If the COPP were to be approved it is likely that ARCO would be required to contribute or participate in the existing Socio-Economic Monitoring Program; Coastal Resource Enhancement Fund; Local Fisheries Enhancement Fund; Local Fishermen's Contingency Fund; and the Permit Compliance Program based on specific criteria used in the permitting of the project.

The mitigation measures required for both the Chevron and the Exxon projects (see other case studies) are close to 200 conditions apiece. According to state and county officials, if the ARCO project was approved, its conditions would greatly exceed that of either Exxon or Chevron due to its proximity to an urban area.

ENVIRONMENTALLY PREFERRED ALTERNATIVE

In Santa Barbara on March 10, 1987, the certification hearing for the EIR/EIS was held. A last-minute addition heightened the tension and the controversy. As mandated by CEQA, the consultants included an "environmentally preferred alternative." This alternative, as set out by the consultants, proposed offshore oil and gas processing. While offshore processing would clearly reduce the amount of significant environmental impacts, it was not acceptable to either the state or the local agencies because it was inconsistent with the County's consolidation and transportation policies. It also generated major criticism from the public. The result was a political bombshell, an environmentally preferred alternative no one could support. Indeed, the JRP, which managed the preparation of the EIR/EIS, did not have the opportunity to review the alternative before it was presented at the hearing.

However, after consultation, the SLC found that the inclusion of the environmentally preferred alternative within the Final EIR/EIS does not mean it has to be preferred by an agency. Rather, it is included in order to conform with requirements of the CEQA guidelines (as is the No-project alternative). Nonetheless, the County objected strongly to the certification of the EIR/EIS because it believed that the environmentally

preferred alternative would encourage litigation from special interest groups and probably would not stand up to judicial scrutiny.

DENIAL OF THE PROJECT

Until early March 1987, ARCO was still under the assumption the project was moving towards approval. ARCO was working with both the County and the SLC in developing mitigations which would allow approval of the project. However, a major turning point in the outcome of the project came from external events. The 1986 election replaced State Controller Ken Cory, an advocate of offshore development, with the current State Controller, Gray Davis, an environmentalist. In addition, another commission member, Lt. Gov. Leo Carthey, decided to run for the Senate in November 1988. Also at this time, Department of the Interior's Five Year Lease sale off California was generating massive public opposition to OCS oil and gas development. Not surprisingly, due to political ambitions, the attitude of the SLC changed since the early days of the project's development.

This became clearly evident shortly before the Commission's March 10, 1987 hearing to certify the project's EIR/EIS. Commissioner Davis held a press conference before the hearing and stated, "Based on the information I have received so far, I will not vote for the ARCO project." Commissioner Davis charged:

Coastal communities adjacent to offshore drilling are shortchanged - they receive only 1% of the oil royalties but must absorb 99% of the impact. Tourism, recreation and fishing are the lifeblood of coastal communities, but the meager percentage of oil royalties received comes nowhere near off-setting the adverse impact of drilling. Unfortunately, because of the uncertainty of federal development plans, it's extremely difficult for the state to make rational decisions within their three mile coastal zone since the impacts from state and federal development tend to be cumulative. Since Santa Barbara has more platforms than any other area in California I feel we must have a study of the cumulative impact of allowing additional state and federal drilling before we take any action on the pending application. (Memorandum, K. Caves, 1987)

Two more well-attended public workshops were held in Santa Barbara to receive public testimony prior to the final SLC decision. By this time there was massive opposition to the project. On May 26, the day before the SLC final hearing, the County Board of Supervisors adopted a resolution to support the SLC staff report denying the project. In response to the SLC staff report recommending denial of the COPP, ARCO submitted heated testimony at the hearing the next day, saying, "From the analysis of the issues of aesthetics in the staff report, it is possible to conclude that the history of the COPP has been one of years of dialogue, engineering design, and environmental review to enable you to reach the decision that offshore platforms are unattractive" (ARCO 1987).

Nonetheless, on May 27, 1987, by a 2-1 vote, the SLC denied the COPP on the premise that ARCO's proposed development would have "significant adverse environmental impacts" and "would result in substantial interference incompatible with other public trust uses" (SLC 1987). In essence, the SLC was turning down \$600 to \$900 million per day in state revenues (depending upon the projected price of oil) with denial of the project.

Soon thereafter, ARCO filed a \$796 million claim against the SLC and the County in response to the denial of the project. The suit requests the court to direct the agencies to issue the necessary permits for the COPP, pay damages due to breach of contract, or pay compensation for inverse condemnation.

UPHOLDING THE PUBLIC TRUST DOCTRINE

Although the state has a financial interest in developing the COPP, there is also a state mandate to protect local interests. Under the Public Trust Doctrine, trust lands must be used for trust purposes. The SLC concluded that the preservation of the COPP leases in their present state, at this time, is an appropriate use of the public trust property. They base this rationale on a landmark California Court decision, *Marks v. Whitney* (1971) whereby the court expanded the public trust doctrine from its traditional purpose of protecting navigation, fisheries, and commerce to encompass water-related recreation and environmental protection. The court held that:

One of the most important public uses of the tidelands -- a use encompassed within the public trust -- is the preservation of those lands in their ecological units for scientific study, as open space, and as environments which provide food and habitat for birds and marine life, and which favorably affect the scenery and climate of the area. (*Marks v. Whitney*, 98 Cal Reporter 790, 1971)

According to SLC staff it is possible that ARCO may appeal this lawsuit all the way to the U.S. Supreme Court. It is uncertain what effect this delay will have on ARCO's future plans.

SUMMARY

ARCO apparently made a few strategic errors going into the COPP. ARCO alienated some of the university community by not resolving the odor and possible health problem at the Coal Oil Point Reserve in a friendly and timely manner. Moreover, ARCO should have anticipated a lot of public concern over the location and size of the platforms. Perhaps it might have been able to lessen some of the opposition to the proposal if it had started by proposing single platforms with phased production of the project. ARCO's initial refusal to comply with county wishes for consolidation of facilities and phasing out of the Ellwood facility also helped to pit the county against the project.

Most of the critical issues, however, were out of ARCO's hands. Basically, the oil fields were located too close to an urbanized area. That the area was host to an university did not help matters for ARCO. This would have been the first oil and gas development in state waters since the 1969 oil spill. Therefore, it is not surprising that the process was victimized by state and county bureaucracy "turf fights." More importantly, the alignment of industry, state, and local players kept changing, which in turn kept altering the rules of the game. Finally, well-organized community opposition, the addition of Commissioner Davis to the SLC, and the politics of approving this project during an election year proved insurmountable to the project.

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CHRONOLOGY: COAL OIL POINT PROJECT

- 1/1946 Issuance of State Lease PRC 208.1. 23 wells were drilled on this lease between 1946-1950.
- 1947 Leases 308 and 309 (about 1920 acres each) awarded to a number of companies.
- 1948 Four wells drilled on 309.1 from upland drillsites.
- 1949-1955 Drilling deferrals were requested from SLC to maintain leases 308 and 309.
- 1959 Richfield Oil Co. (now ARCO) acquires 75% interest in above leases. Becomes operator.
- 1961 Three wells drilled in lease 308 and 309 from onshore facilities built near Coal Oil Pt. Total production 1.3 m.b. Not producing today. ARCO purchases Phillips' 25% interest in 1985.
- 4/29/64 Lease 3120 issued (3,324 acres) to ARCO.
- 4/8/65 Lease 3242 issued (4,290 acres). Both leases issued to ARCO and Socony-Mobil, each with 50% interest. ARCO is the operator.
- 6/66 Platform Holly erected 2 miles offshore on lease 3242. Platform supports one double deck with 30 well slots.
- 1/69 Oil spill caused by blowout in federal waters within Santa Barbara Channel.
- 2/69 State Lands Commission imposes moratorium on all offshore state oil and gas leases.
- 12/73 Moratorium for new wells lifted on a lease-by-lease review if drilled from onshore facilities or existing platforms. SLC imposes stricter drilling and safety procedures.

- 1974 ARCO applies for permit to drill 17 additional wells from Platform Holly. EIR prepared by Dames and Moore for SLC.
- 5/27/75 Resumption of drilling was authorized for leases 3120 and 3242.
- 1976 Development drilling operations resumed and continued through 1981.
- 1979 ARCO applies to SLC for permit to resume exploratory drilling on leases 308 and 309. EIR begun by Atlantis Scientific for SLC.
- 10/8/80 EIR and exploration plan certified and authorization was given for resumption of exploratory drilling (from mobile rig) on leases 308 and 309.
- 1981 ARCO and Aminoil USA (Phillips' predecessor) applied to SLC for resumption of exploratory drilling on leases 308 and 309.
- 7/6/81 ARCO, Santa Barbara County Air Pollution Control District, Santa Barbara County, and SLC enter into MOU agreement for installation by ARCO of seep control cap in order to obtain "air pollution credits."
- 11/81 ARCO signs agreement with SLC regarding claims processing and liability for oil spill, and future SLC regulations applying to leases. CCC approval of ARCO PRC 309.1 drilling program.
- 2/5/82 SLC certifies exploration plan and EIR prepared by ERG-Jacobs and authorizes exploratory drilling on leases 208, 3120, and 3242.
- 5/10/82-
7/5/82 Exploratory well "309 No. 8" drilled. The well tested at 4,000 barrels of oil per day.
- 6/16/82 CCC approves Seep Containment Device.

- 7/6/82-
11/14/82 Exploratory well "309 No.9" drilled. The two wells establish the presence of a substantial petroleum reserve under leases 308.1, 309.1 and 3242.1 now known as the "Coal Oil Point Field."
- 10/21/82 ARCO installs seep control cap at a cost of \$7,965,000.
- 10/31/82 ARCO enlarges seep containment cap at an additional \$863,000.
- 6/83-
9/83 ARCO considers various options for COPP. SLC threatens to "deem PDP incomplete" if it does not meet SLC requirements for lease segregation.
- 9/83 The SLC, County of Santa Barbara, and ARCO enter into a Joint Review Panel (MOU) for COPP. The SLC is deemed the lead agency.
- 12/83 ARCO and partners, Mobil and Aminoil (now Phillips), file a preliminary development plan for Coal Oil Pt. Project.
- 3/20/84 COPP JRP meeting held at UCSB.
- 5/84 The SLC deems ARCO's PDP complete for the purpose of environmental review. ARCO proposes two double platforms at Heron and Hawk locations and a number of alternatives for both oil and gas facilities.
- 6/84 Chambers Consultants and Planners selected as EIR consultants by the State Lands Commission.
- 2/85 ARCO proposes two platforms and new or modified onshore facilities to develop COPP. Four Corners Pipeline Co. and Aminoil are co-applicants and are proposing alternate ways of transporting COP oil. Four Corners proposes a pipeline from Gaviota to LA refineries. Aminoil proposes to expand its marine terminal at Ellwood if a pipeline exiting the County is not built.

- 2/85 ARCO withdraws application for construction of facilities in Eagle Canyon. The SLC grants a 67-day extension to the 1 yr. time-clock (which now expires on Aug. 1, 1985) due to changes in the project description.
- The ALL American Pipeline Company (Celeron Corp.) proposes to construct a 1,170-mile-long common carrier pipeline from Emidio, California, to McCamey, Texas.
- 3/85 Administrative Draft EIR completed for Coal Oil Pt. Project.
- 4/85 ARCO withdraws application (upon SLC request) due to new discovery of additional oil and gas resources within leases 208 and 3120 (the Embarcadero and South Ellwood fields).
- 5/85 Hodel releases a Draft Proposed OCS Oil and Gas Leasing Program for mid-1986 to mid-1991. The County requests that the DOI delete tracts along the County's coastline from further leasing until current impacts can be assessed. County planning is under strain due to currently approved projects, that if constructed, could increase oil and gas production by 800% and 4,000% respectively.
- Deletion of tracts are requested until such time as adequate planning, infrastructure, and monitoring programs are in place to meet new development needs.
- Energy Division staff continues oil and gas policy analysis. 14 policy and procedural issues are being evaluated which include NGL/LPG transport, supply base siting, consolidation policies, and socioeconomic monitoring programs.
- 5/29/85 A workshop is held on the Coastal Resource Enhancement Fund to determine how the fund will operate and assess fees from developers.

- 5/29/85 The Tri-Counties have agreed to a joint monitoring program to determine socio-economic impacts for new oil and gas developments. The County distributes RFP's to consultants for the program.
- 6/7/85 COPP JRP meeting in Sacramento.
- 6/13/85 ARCO gains 100% interest from Phillips for lease 208 (1920 acres) which had been awarded to predecessor of Phillips in 1946. Lease is producing approximately 1000 barrels of oil per day from onshore facilities. SLC approves the sale.
- 6/85 GOO releases county-wide initiative that would revise certain county energy policies and amend both the LCP and zoning ordinances.
- Energy Division staff present consolidation analysis to Planning Commission.
- 7/85 ARCO proposes amended application for COPP. Changes in application are still under revision but may include moving one platform farther west near existing Holly, proposing an option for a new gas facility in Venadito Canyon while also pursuing option of consolidation facilities in Las Flores Canyon.
- US Army Corp of Engineers joins the JRP for review of the new application. The environmental review document will now fulfill both EIR/S requirements.
- County Planning Commission holds hearings on LPG/NGL transportation, consolidation issues, the state Air Quality Attainment Plan, and the proposed SEMP.
- 8/85 Hodel meets with California legislators to work out an agreement on future offshore leasing moratoriums in California.

- 8/85 Citizens Planning Association releases a policy request to county decision-makers covering seven areas dealing with pipelines, air emissions, and consolidation of facilities.
- ARCO resubmits its COPP application as outlined above (July). Additional proposed facilities include expansion of the marine terminal at Ellwood and storage tanks at Dos Pueblos and a new gas processing facility at Venadito. Changes reflect an increase in gas production from 90 to 150 MMSCF. These changes are needed in order to develop the South Ellwood field and Embarcadero Field.
- 8/27/85 ARCO's COPP application is deemed incomplete by staff because it is inconsistent with existing county policies with respect to both the expansion of the Ellwood marine terminal and the proposed Venadito site. County policy states that only one marine terminal is allowed and all others would become non-conforming uses and all new sites should be consolidated (at Las Flores Canyon).
- 9/85 The Board of Supervisors draft a ballot advisory measure which will appear on the November election ballot to counter GOO's initiative to alter county policies and regulations related to onshore O&G facilities.
- 10/30/85 The SLC holds hearing on future re-leasing of expired leases (8) in the tidelands of the County. Re-leasing expected to occur in 1986/7.
- 11/85 Measure A (initiative sponsored by GOO) is defeated by voters. Measure B, the advisory measure on current County consolidation and transportation policies is approved by 75% of the voters.

- 11/85 The interim marine terminal at Gaviota is approved in conjunction with Exxon's consolidated marine terminal agreement (October). County begins hearings on the Final Development Plan for the Celeron/All American pipeline and work continues on the SCPS proposal.
- Work continues on the programs that were created as permit conditions for large coastal developments (particularly oil and gas processing). Drafts for each program are being reviewed within county departments.
- 11/6/85 ARCO responds to numerous questions by County and SLC pertaining to the environmental review of proposed project.
- 11/12/85 ARCO resubmits its amended application and has dropped its application for expanding the Ellwood marine terminal and the new Venadito gas processing facility. ARCO's preferred location for oil processing remains at the existing Ellwood site; however, LFC will be considered in the EIR as an option. Gas processing will be considered only at LFC.
- 12/13/85 SLC deems COPP application incomplete.
- 12/20/85 ARCO'S PDP is deemed complete by SLC.
- 1/8/86 ARCO's PDP is deemed complete by the County. The 180 day timeclock mandated by the Permit Streamlining Act begins at this time. Work on the revised EIR begins.
- 1/86 The Board of Supervisors sends letter to DOI Secretary Hodel requesting that the MMS comply with specific provisions that are critical to overall air quality maintenance in the County for offshore oil and gas development.
- 1/23/86 A workshop is held on the Coastal Resource Enhancement Fund.

- 2/86 A scoping hearing to obtain comments on the environmental review for the COPP is held. A Notice of Preparation (NOP) is released by the SLC and COE.
- 3/4/86 Meeting of COPP JRP in Bakersfield.
- 3/86 A workshop on the commingling issue for the COPP is held at UCSB to explore the technical and environmental issues with participation from state, local, and federal agencies, oil companies, and research firms.
- ARCO has again resubmitted its application for the COPP. ARCO notifies the JRP that the option for platform Hawk has been dropped in favor of a complex connected to platform Holly. There will now be two double platforms plus one triple.
- A public meeting is held in Santa Barbara to solicit comments on proposed Federal 5 Year OCS Leasing Program. County urges DOI to exclude Santa Barbara Channel and Santa Maria Basin from future leasing until effects of developing existing leases are assessed. The County also requests revision of federal offshore air quality rules prior to leasing.
- 4/86 The EIR/S for the COPP will be expanded to include an analysis of subtidal/kelp bed impacts caused by pipeline construction; drill and water dispersion analysis investigating potential impacts on Goleta Beach, UCSB, and research areas such as Naples Reef.
- 4/28/86 Board of Supervisors approves development of Permit Compliance Program. An interdepartmental committee including representatives of the Fire, Public Works, and Resource Management departments, the County Counsel, and Health Care Services meet to develop the program.
- 5/86 Environmental work is on-going for the ARCO COPP. Pipeline Consolidation Policy is approved by Planning Commission.

- 6/86 The Administrative Draft of the EIR/S is being reviewed by county staff.
- 8/86 Due to minor delays in air quality modeling, the Administrative Draft EIR/S for the COPP is still under production by the consultant, Chambers Group Inc.
- 9/86 The Draft EIR is distributed by the SLC for public review.
- 10/21/86 Draft EIR Public Hearing at Ventura County Government Center.
- 10/23/86 Draft EIR Public Hearing at UCSB.
- 10/24/86 Draft EIR Public Hearing at Santa Barbara County Hearing Room.
- 11/86 Written comments for COPP are accepted until Nov. 3 by the SLC.
- 1/87 The COPP application has been deemed complete by both the SLC and the County. Work on the revised EIR/S begins.
- 1/13/87 Final EIS/EIR made available to public. Public hearing held in Santa Barbara.
- 1/28/87 Second Public hearing held on Final EIR/S.
- 3/6/87 ARCO files an application with the ACPD for a permit to construct its preferred project. ARCO also announces that it plans to phase development of the project, installing Heron in 1988, Haven in 1991, and Holly-B in 1993.

- 3/10/87 Public hearing held in Santa Barbara whereby the SLC certifies the COPP EIR. Prior to the certification hearing Commissioner Davis states, "Based on the information I have received so far, I will not vote for the ARCO project." All three commissioners request SLC staff to undertake cumulative analysis of all state and federal oil and gas projects.
- 5/18/87 The County and UCSB hold a joint workshop to receive public testimony to send a transcript to Sacramento for SLC hearing on the 27th.
- 5/21/87 Additional hearing held at Santa Barbara County Courthouse regarding proposed project.
- 5/26/87 Santa Barbara County's Board of Supervisors adopt resolution to support SLC staff report denying project.
- 5/27/87 The SLC denies permits for the offshore components (platforms and pipelines) for the Coal Oil Point Project. Following this 2-1 vote by State Lands Commissioners, the County and Air Pollution Control Board have up to six months to take action on their permits. The Commission also directs its staff to develop a work program over the next six months for a study of the cumulative effects of state/federal oil and gas development.
- 8/87 ARCO files a \$796 million claim against the SLC and County in response to the denial of the COPP. The application to the County for the onshore portions of the project have not been withdrawn, and county staff have resumed the permitting procedure.
- 9/22/87 A Planning Commission workshop is held for reviewing the COPP permitting process. At the workshop ARCO announces a change in its preferred project. ARCO now proposes to construct a consolidated commingled oil processing facility in LFC. No expansion would occur at the Ellwood facility. The County rejects ARCO's claims for damages with respect to County actions on the project.

- 9/30/87 ARCO files a lawsuit in LA Superior Court against the SLC, the County, and the County Air Pollution District. The suit requests the court to direct the agencies to issue necessary permits for the COPP, pay damages due to breach of contract, or pay compensation for inverse condemnation.
- 10/15/87 &
10/19/87 Planning Commission hearings are held on COPP. Energy Division staff recommend denial of both the Ellwood and the LFC project. The County must make a final decision before November 23 Permit Streamlining Act deadline.
- 11/9/87 ARCO appeals the Planning Commissions denial of the onshore portions of the project to the Board of Supervisors.
- 12/9/87 The Board of Supervisors upholds the Planning Commissions denial of the onshore portion of the COPP.

Note: This chronology is compiled from a variety of sources, including but not limited to Santa Barbara County Energy Division "Status Reports" (November 1985 - June 1988), ARCO's "COPP Hearing Brief," and SLC documents. For some of the events, dates reported by these sources are in conflict.

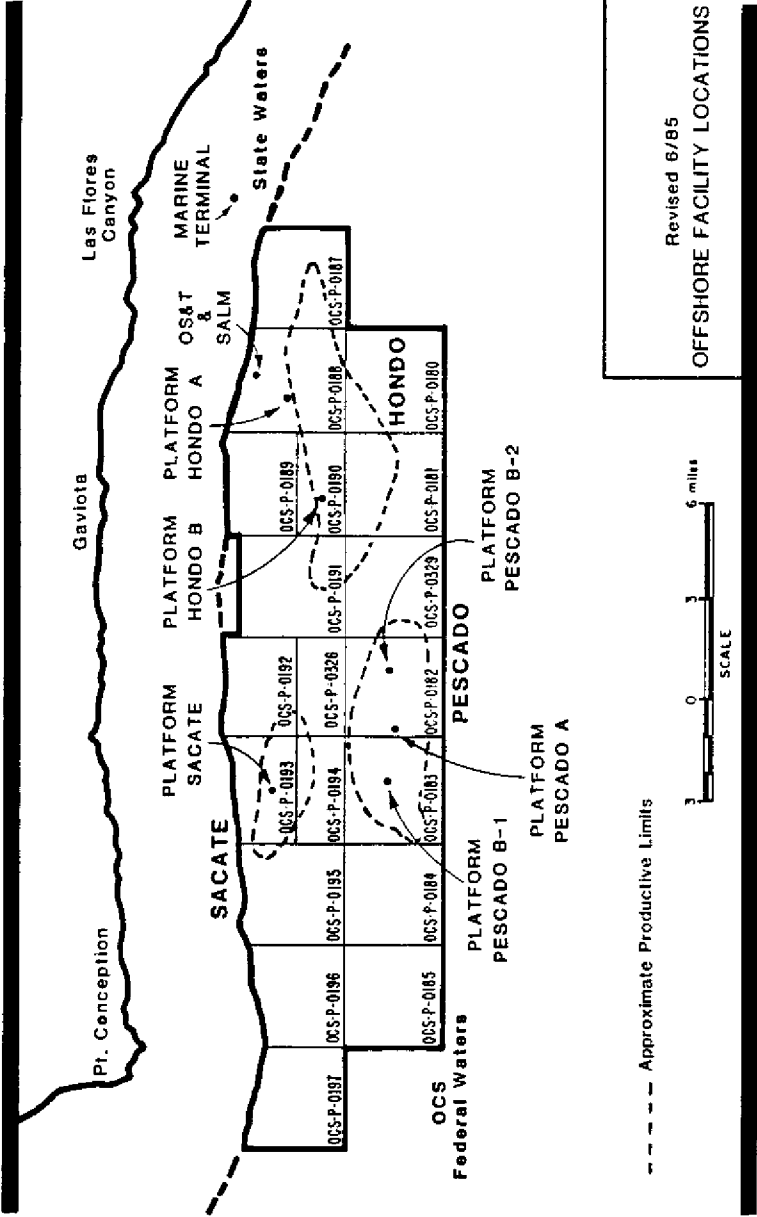
EXXON'S SANTA YNEZ UNIT

Exxon began its search for oil in the Santa Barbara Channel in 1949, and by 1966 the broad outlines of the Hondo field's structure had been delineated. This led the company to request that the Bureau of Land Management (a forerunner to MMS) hold a lease sale in the channel so that test wells might be drilled. The federal sale was scheduled for February 1968 as Lease Sale P4. The significance of the date is that the sale occurred prior to 1969 and was therefore not subject to the Environmental Protection Act by which subsequent sales have been constrained. Lease sale stipulations were concerned primarily with the protection of Department of Defense interests with respect to tactical military operations and with the assumption of risk for damage or injury to anyone connected with the activities of the leased property.

In the 1968 lease sale, Exxon acquired its Santa Ynez leases for \$94 million. The company then tested the tracts by drilling 50 "wildcat" wells. Three oil fields were identified in water depths ranging from 600 to 1,200 feet: Hondo, Sacate, and Pescado (see Figure C.2). Two other companies, Chevron U.S.A. and Shell, also bought leases in this potentially productive area in the same sale. The three companies, with Exxon (the major leaseholder) as operator, proposed to consolidate their separate holdings as a unit in 1970. This plan was approved by the U.S. Geological Survey. Thus, the Santa Ynez unit (SYU) came into being. The SYU lies within the federal OCS approximately three to nine miles offshore in the Santa Barbara Channel (see Figure C.3). The 19 tracts forming the unit cover about 171 square miles.

Development and production plans for the unit can be divided into two phases. Phase I includes the period starting at the lease sale to production from the Hondo (A) platform in 1981. Phase II includes the period from 1981 to the present, during which Exxon submitted applications for further development of the SYU. One of the interesting facts about the two phases is the similarity between the proposals submitted by Exxon. In each phase, the production plan contained both an offshore and an onshore development option that agencies responsible for granting required permits were to review. The permitting process in Phase

Figure C.2 Identified Oil Fields, Santa Ynez Unit.



Source: Arthur D. Little, 1986.

I resulted in the implementation of the offshore option, while in the second phase the onshore option received final approval.

In both phases, controversy continually surfaced over issues related to air quality and over jurisdiction of OCS air emissions. Dispute arose over the effects of OCS emissions on the onshore environment. Of primary concern was the level of nitrogen oxides (NOx) that would be emitted. NOx are photochemical pollutants that are involved in the formation of ozone in the atmosphere. Sources of air pollution from OCS related activities in the County include:

- o fugitive emissions and flare or burner exhausts from onshore processing and storage tanks,
- o emissions from platform operations and shipping in the channel,
- o emissions from oil spills or other accidents that release crude oil, and
- o moored tanker emissions, including stack gases and vapors displaced during loading at marine terminals.

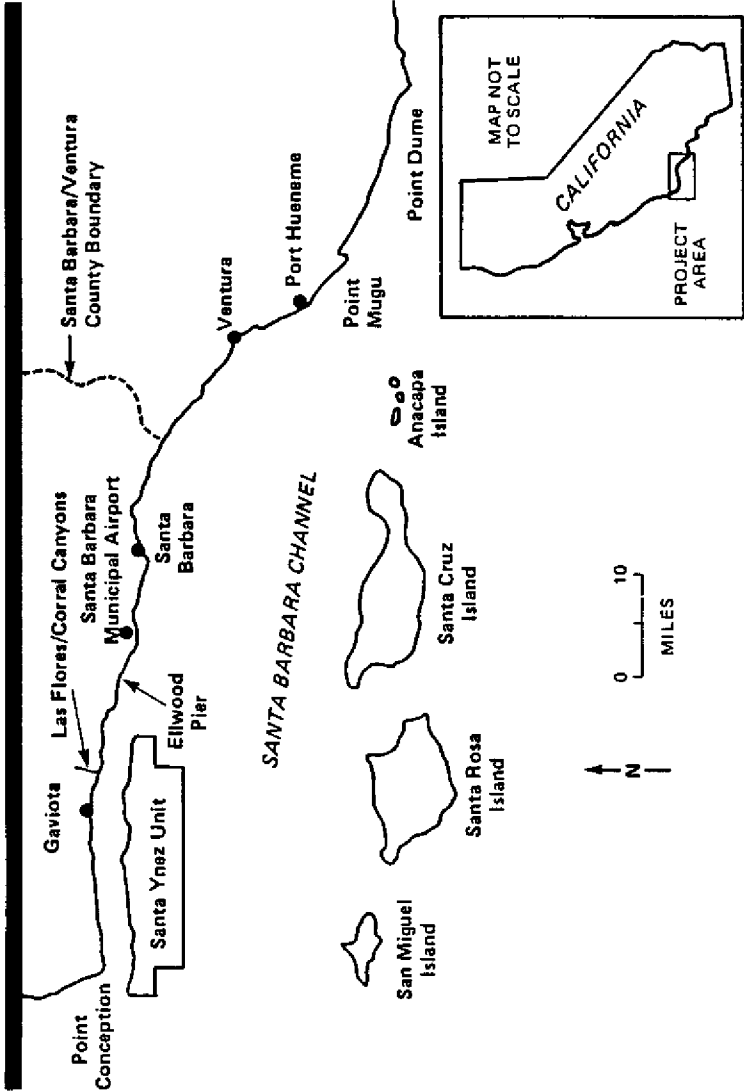
Onshore pipelines are preferred by the County over marine transportation since they reduce air emissions and oil spills are easier to contain. As early as 1976, the County pursued policies of consolidation into a single onshore processing and storage facility with a single marine terminal or pipeline (if economically and environmentally feasible), or some combination of facilities that would reduce total impacts.

Throughout both phases, Exxon and the County argued over who had authority for OCS emissions. Exxon contended that in federal waters beyond the three-mile territorial sea, they were required only to implement Department of the Interior mitigations. Santa Barbara County asserted that offshore emissions blowing onshore, regardless of whether they were in territorial or federal waters, must be offset for the County to meet the air quality standards in the Clean Air Act. The SYU project is estimated to constitute 25% of the future Santa Barbara Channel oil production. The project, including the first three platforms and permitted onshore facilities, will contribute approximately 2% of the total 1985 Santa Barbara South Coast inventory.

PHASE I: PROJECT DESCRIPTION

The initial development plan for the SYU was submitted by Exxon to the Department of the Interior in 1971. As mentioned, the plan was

Figure C.3 Area Map.



Source: Arthur D. Little, 1986.

composed of two options to handle production from the 945 foot Hondo production platform (in 850 feet of water) and the drilling of 28 wells from it. One option called for the storage and processing of oil and gas onshore. The oil would then be transferred through existing marine terminal facilities in state waters at El Capitan to tankers bound for refineries on the Gulf of Mexico. The other option called for storage and treatment at a tanker retrofitted into an offshore storage and treatment (OS&T) vessel moored in federal waters 3.2 miles offshore. The two plans were devised in response to Exxon's uncertainty over whether it would receive the necessary state and local permits to implement its onshore plan. The uncertainty stemmed from growing county-wide opposition to oil development by elected officials and appointed members of various boards and commissions, and local media. In addition, private groups such as Get Oil Out (GOO) were being formed. Exxon, and the oil industry in general, was not prepared for this type of opposition since it was not encountered in oil development activities in the Gulf of Mexico.

Exxon prepared the offshore option to proceed with oil treatment on the OS&T vessel secured by a Single Anchor Leg Mooring System (SALM) in the event local authorities did not approve the onshore plan. An EIS, the first of its kind for an OCS development, was prepared for the project. In 1974, after three and a half years of study, the Department of the Interior approved the development plan for both options. Approval was contingent upon Exxon making good faith efforts to obtain the necessary state and local agency's permits to construct an onshore facility under reasonable terms and conditions.

PHASE I: PERMIT HISTORY

Initial stages of the permitting process were the smoothest the project would see. Prior to Department of the Interior approval, Exxon prepared applications for a Certificate of Public Convenience and Necessity from the Federal Power Commission to permit the construction of a pipeline to transport gas from the wells to shore, and filed for authorization to construct an offshore platform from the Army Corps of Engineers (COE). The Office of Environmental Quality prepared the county's EIR and transmitted it to the County Planning Commission in October 1974 with the onshore alternative designated as the recommended option. In December 1974, the COE permit was issued and the State Lands Commission (SLC) determined the federal EIS met all the requirements of the California Environmental Quality Act. At the same

time, the SLC then granted Exxon a lease for the marine terminal and pipelines that would cross state tidelands.

Part of Exxon's onshore proposal was to develop 15 acres of a 1,500-acre parcel the company purchased in the early 1970s in Las Flores Canyon (LFC). Public concern over, and opposition to, the industrialization of the coastline was growing at this time. In part, for this reason, the LFC site was considered preferable to other locations along the coast because it was hidden from public view by coastal hills and its size allowed for a buffer around the project. Santa Barbara County zoned Las Flores Canyon to permit the treatment and storage of oil and processing of gas in December 1974.

At the same time, the County Planning Commission approved the onshore project after attaching 72 conditions that strictly controlled construction and operation impacts of the facility. None of the conditions, however, addressed tanker emissions. Exxon agreed to the conditions, and the following February the Board of Supervisors approved the project as conditioned.

It was at this point that the project first ran into serious trouble. At the local level, sensitivity to the environmental effects of oil and gas development left some segments of the population opposed to the project. A referendum vote on the supervisors' actions was forced. The issue on the ballot was whether to allow the processing and storage facilities at Las Flores Canyon. Exxon ran a well-financed campaign based on the theme that they would move its processing plant offshore if they lost the election. This would remove the facilities from all county environmental control. The vote, on May 25, 1975, by a margin of only 831 votes was in favor of the onshore project.

In September 1975, the South Central Regional Coastal Commission gave its approval for the project with the addition of 3 conditions over the 72 required by the County Planning Commission. The decision was appealed to the State Coastal Commission by local interest groups. They contended that data on air quality impacts of the marine terminal was incomplete and therefore in violation of the Coastal Act of 1972. It was suggested that an onshore pipeline to refineries in Los Angeles would eliminate the need for a marine terminal and have fewer significant environmental effects.

The State Coastal Commission approved the onshore option but placed conditions on the project that were objectionable to Exxon. The coastal development permit allowed Exxon to operate a marine terminal for five years. At the end of that period, the permit would expire unless the Coastal Commission found that either (1) a pipeline from LFC to LA was feasible and Exxon had made reasonable progress in fulfilling its obligation toward construction or (2) a pipeline was not a feasible alternative. It was proposed that a committee formed of Exxon, the Coastal Commission, and the Public Utilities Commission make the determination of feasibility of a pipeline to Los Angeles or alternative locations. In addition to not wanting to submit to this third party review, Exxon argued that a pipeline to Los Angeles was not feasible for it since its refineries with the capacity to handle the thick, high sulfur oil of the Channel were located in Texas.

As a result of these conditions, Exxon brought suit March 1976 against the State Coastal Commission, "seeking to prevent it from interfering with plans that had already been approved by federal, state, and local agencies." Exxon's position was that the State Coastal Commission had exceeded its mandated authority by setting conditions beyond its jurisdiction. Quick resolution of the case did not occur, so Exxon dropped the suit and pursued construction of the OS&T in federal waters.

The SLC appealed to the Department of the Interior to reconsider its prior approval of the offshore alternative. As mentioned earlier, the Department of the Interior reserved the right to rescind its approval if it could be proven that Exxon had not diligently made efforts to obtain approval from the appropriate state agencies. The SLC appealed to the Department of the Interior to make such a finding.

At the heart of the dispute between Exxon and state and county agencies was air quality impacts from the different transportation alternatives. Thus, the Department of the Interior undertook an analysis of the alternatives for transporting oil in an attempt to resolve differences. Using Exxon data, the Department of the Interior found that the Las Flores facility and tanker transportation was the most environmentally sound alternative. This was contrary to United States Geological Service findings in the final Environmental Impact Statement (FEIS). The FEIS found the use of onshore consolidated pipelines to move processed crude to refineries was environmentally preferable to allowing individual marine terminal and tank programs. In 1976, the Department of the Interior announced that the State Coastal Commission permit conditions requiring a pipeline feasibility study were unreasonable and that Exxon had made a

diligent, good faith effort to obtain the shore site approvals. The Department of the Interior gave Exxon permission to proceed with its OS&T plans July 1976.

At this point a battle was forming over who had jurisdiction over air emissions on the OCS. In an earlier review of the project, the EPA found that the offshore facilities would not have significant effects onshore. By September 1976, the EPA determined that an air permit might be needed for the OS&T and requested emissions data. This was the first time the EPA had asserted authority over OCS air emissions. Exxon, under protest, supplied the data requested. EPA also requested that Exxon file for a NPDES water discharge permit for the OS&T.

In May 1977, the EPA issued the NPDES water discharge permit and set a precedent by attaching air emissions conditions to it. Exxon protested these conditions and eventually received its water discharge permits without them. Yet, EPA made an official determination in 1978 that Exxon could not proceed to install the OS&T until it received an air permit. At the same time, the California Air Resources Board asserted jurisdiction over the OS&T and required Exxon to install \$10 million of additional air emissions control equipment. With the near completion of the OS&T vessel, Exxon requested that the Ninth Circuit Court of Appeals review both the EPA and the California Air Resources Board suits. The U.S. District Court in Los Angeles held, in August 1979, that the Department of the Interior and not the Environmental Protection Agency has jurisdiction over air emissions from resource development on the OCS and that California could not require an air permit for the OS&T. Installation of the Hondo platform jacket proceeded, and on April 2, 1981, production from the platform began.

PHASE II: PROJECT DESCRIPTION

In 1982, Exxon submitted to MMS a revised Development Production Plan to further develop the SYU. As in Phase I, two oil and gas production and treating options were included in the plan (see Table C.1). Both options proposed to install three or four additional platforms (see Figure C.4). Option A (offshore oil separation and treatment) included modifications to the existing Hondo (A) platform to accommodate production from additional platforms and modifications to the OS&T to increase capacity from 40,000 b/d to 80,000 b/d. Option B (onshore oil separation and treatment) included building a 140,000 b/d onshore processing plant, consolidation of processing facilities at LFC, and

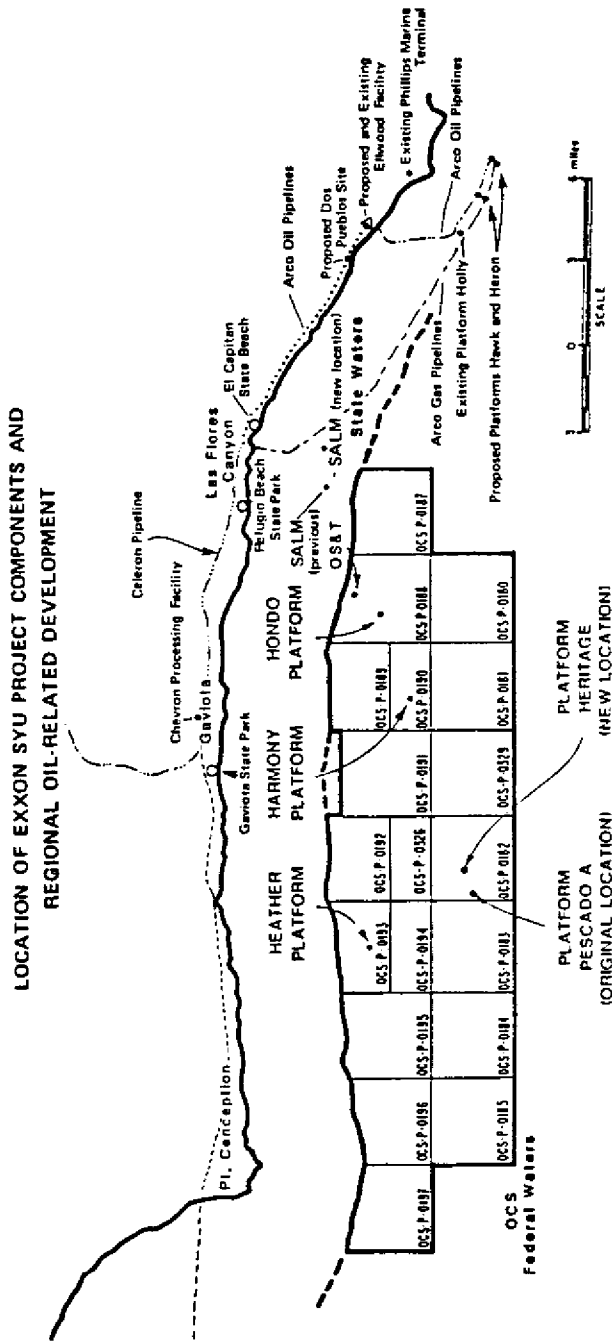
Table C.1 Major Project Elements for Proposed Santa Ynez Unit Project.

<u>Project Element</u>	<u>Option A</u>	<u>Option B</u>
Four new platforms*	X	X
OS&T expansion	X	
New marine terminal (removal OS&T)		X
Onshore gas treatment facilities expansion	X	X
Onshore oil treatment and storage facilities		X
Onshore cogeneration power plant		X
Pipelines:		
offshore between platforms	X	X
platforms to shore	X	X
platform to existing OS&T	X	
shore to nearshore terminal		X
onshore to existing gas treatment facilities	X	X
onshore to oil treatment and storage facilities		X

*Three to four new platforms for each option are proposed.

Source: Arthur D. Little, 1986.

Figure C.4 Santa Ynez Unit Facility Location.



Source: Arthur D. Little, 1986.

the removal of the OS&T. MMS found the Development and Production Plan complete on December 27, 1982.

In October 1982, Exxon, the County of Santa Barbara, the Santa Barbara County Air Pollution Control District, and California Air Resources Board executed a Memorandum of Agreement to expedite the processing of the onshore component of the SYU. Exxon agreed to provisions that affected both the onshore and the offshore elements of Option B. These provisions went beyond Department of the Interior rules to reduce OCS emissions and were agreed to by Exxon in the hope of expediting county decisions regarding the feasibility of building a pipeline and the processing of permits consistent with the MOA. Provisions included the removal of the OS&T vessel, removal of the El Capitan marine terminal, electrification of the drill rigs (instead of using diesel engines), 50% NOx control on offshore turbines, a fugitive hydrocarbon maintenance program, and a hydrocarbon vapor control system on the proposed nearshore marine terminal. Following the MOA, Exxon submitted its project application, which included both its onshore and offshore options. The County Resource Management Department found the application complete in April 1983.

PHASE II: PERMIT HISTORY

Once Exxon filed its Development and Production Plan (DPP) with the MMS and it was deemed complete, MMS could begin work on an EIS/EIR for the project. Under federal law, the California Coastal Commission (CCC) had six months to review the project's consistency with the California Coastal Management Program once the Development and Production Plan was filed. However, since the preparation of the EIS/EIR was scheduled to take one year, the CCC had to determine consistency on both Option A and Option B without the benefit of an EIR/EIS.

CCC review was further complicated by the need to individually consider the onshore and offshore components of Option B. The CCC did make a finding of consistency on the offshore component of Option B. However, the CCC needed to delay reaching a finding on consistency of the onshore component until Santa Barbara County had issued its local permits. This situation does not usually arise since applicants typically file for their consistency certification and permit applications at the same time.

The CCC objected to Option A on environmental and economic grounds and found it inconsistent with the California Coastal Management Plan. In a staff report dated September 2, 1983, the CCC found the OS&T vessel emissions would be far greater than from onshore storage and treatment, even though production at the OS&T would be less. In addition, Option A was found to have increased risks of oil spills.

In response to the finding of inconsistency on Option A, Exxon filed an appeal with the Department of Commerce (DOC) to override the CCC finding. Exxon contended that the CCC had misapplied Coastal Act policies and exceeded its authority under the federal Coastal Zone Management Act. The DOC issued an interim determination on the offshore option consistency appeal and postponed final decision until the EIS/EIR was available and until the state and county took action on the project. This represents a significant difference from Phase I, when CCC did not have the authority to review Exxon's plan for consistency with the California Coastal Management Plan (since the plan had not yet received federal approval). During Phase I, Exxon was allowed to proceed with its offshore option.

A Joint Review Panel was formed to prepare a joint EIS/EIR for the SYU. The panel was composed of staff from the SLC, CCC, MMS, Governor's Office of Planning and Research, and Santa Barbara County. Santa Barbara served as the state lead agency and chair of the panel, and MMS served as the federal lead agency to ensure compliance with the California Environmental Quality Act and the National Environmental Planning Act, respectively. The JRP served as a forum for modifying the project to meet the concerns of all the participating agencies. The EIS/EIR was prepared and certified for the project in July 1984 by Santa Barbara County.

Two weeks later, the County Board of Supervisors adopted amendments to its Local Coastal Program that would allow for a new or expanded marine terminal for tanker transportation of crude oil until pipelines became available and for emergency use. These amendments were important since, as mentioned earlier, it had been stated County policy since the mid-1970s to require onshore pipelines when environmentally and economically feasible. The oil companies had been adamant in their requests for the option of a marine terminal since they did not like to be at the mercy of the pipeline owners, who could set the tariffs for oil transportation.

In August 1984, the County approved all the elements of Option B except the marine terminal. The onshore facilities that were approved included oil and gas processing plants, oil storage, a cogeneration plant, and pipelines. The County attached a condition to the project requiring the oil to be piped out of the County. The marine terminal was denied on the basis of environmental effects associated with air quality concerns if the SALM was located 5,000 feet offshore as proposed. The County suggested that Exxon mitigate these concerns by locating the terminal farther offshore. The Board of Supervisors could not permit a marine terminal at this time primarily due to the insufficiency of the alternative marine terminal site assessment farther offshore in certified environmental documents. On the basis of the conditions imposed and the denial of the marine terminal, Exxon brought an action in federal court against the County and the Air Pollution Control District. In addition, Exxon reactivated its DOC Option A appeal.

At the time of approval of Option B, the County initiated a Marine Terminal Siting study to assess the environmental effects of alternate marine terminal sites offshore. The results of this study were included in the Getty Gaviota Consolidated Coastal Facility EIR. Alternative tanker mooring locations up to 14,000 feet offshore LFC and Gaviota were considered in the study. The Exxon SYU marine terminal was considered as a project alternative to the proposed Gaviota terminal expansion. In certifying the Getty Gaviota Consolidated Coastal Facility EIR (which included the results of the study) in January 1985, the Planning Commission designated Gaviota as the preferred site for the single consolidated marine terminal allowed by County policy. By February, the Planning Commission had approved Getty's (now Texaco's) PDP and conditional use permit.

The Planning Commission's decision was appealed to the Board of Supervisors by a number of parties. Five companies (including Exxon, Texaco, Chevron, Sun, and Phillips) had proposed an alternative project to the County prior to the February 1985 Planning Commission decision. This proposal included an interim marine terminal at Gaviota which would be phased out upon completion of either pipelines to the Gulf Coast and Los Angeles or a new consolidated marine terminal at Las Flores Canyon.

In an effort to resolve their pending litigation, Exxon and the County entered into a Settlement Agreement to modify permit conditions. In addition, the County was required to reconsider its decision about the siting of a marine terminal at Gaviota in light of the LFC proposal

submitted by the oil industry. The County had to take action on this proposal by March 5, 1985. In addition, mitigation required of Exxon for air quality were further defined. Mitigation included compliance with all Department of the Interior air quality regulations (including new regulations in the process of being developed at the time of the agreement), applying OCS emissions control technology as outlined in the MOA, aiding in the prevention of violations of federal ambient air quality standards in the County, locating the SALM 10,000 to 14,000 feet offshore, and building a 15 to 25 MW cogeneration plant.

By March 5, as per the agreement, the County selected Gaviota as the consolidated marine terminal. This decision was changed by October 1985, when the County Board of Supervisors had time to review Exxon's proposals. LFC was selected as the new preferred consolidated marine terminal site and the concept of an interim marine terminal at Gaviota was approved. The County chose the LFC site over expansion of existing facilities at Gaviota since the onshore portions of the Gaviota site are in a major viewshed within the coastal zone. The approved LFC project included a marine tanker terminal at LFC with a permanent throughput of 140,000 b/d, a SALM 14,000 feet offshore, and subsea pipelines to shore.

A draft proposal was submitted by Exxon to the County in January 1986 modifying the original project proposal to resolve remaining air quality issues. The new proposal included (1) the elimination of one of the four proposed platforms and delayed installation of platform Heather in the Sacate field until after peak emissions at the other two proposed platforms; (2) the elimination of the expansion of the POPCO Gas Plant from 60 MSCFD to 135 MSCFD; (3) phasing the installation of the oil treating plant; (4) phasing construction of the marine terminal; and (5) providing for the construction of a consolidated NGL transportation facility (see Table C.2).

The Board of Supervisors amended the 1985 Settlement Agreement in March 1986 to reflect project modifications proposed by Exxon which addressed issues in dispute with the Air Pollution Control District. In September 1986 the Board of Supervisors approved the revised preliminary development plan. In its approval, new permit conditions were included that were objectionable to Exxon. The conditions required Exxon to fully mitigate adverse air quality impacts affecting the County. Exxon felt this violated the 1986 Agreement, and they withdrew their final development plan from further County review. The DOC appeal and lawsuit against the County and the CCC were resumed. The underlying issue

Table C.2 Comparison of Revised Phase II Santa Ynez Project Components.

<u>SUMMARY COMPARISON OF PROJECT COMPONENTS</u>		
<u>Parameter</u>	<u>Proposed SYU Development</u>	<u>Revised SYU Development</u>
Number of New Platforms	4	3
Oil Production Level (KBCD)	140	140
Gas Production Level (Mscfd)	135 ¹	75
Location of Oil Treating Facilities	Las Flores Canyon	Las Flores Canyon
Location of Tanker Loadings	SALM ²	SALM--new location
Source of Power		
Onshore		
Gas Sales Facilities	Local Utility	Local Utility
Remaining Facilities	Cogen. Utility	Cogen. Utility
Offshore	Cogen. Turbine	Cogen. Turbine
Cogeneration Plant Size (MW)	50 ³	25
Gas Sales Facility Requirements (Facilities beyond POPCO's permitted 60 Mscfd) (Mscfd)	75 ⁴	--
Stripping Gas Treating Facility Requirements (Mscfd)	15	21
Total Number of Acres Developed	68.5	98.2
Peak Number of Local Direct Employees	609	723

¹ Gas production levels of 75 Mscfd was approved by the County.
² Has not approved by the County.
³ 15 MW was approved by the County; 25 MW and 50 MW were conditionally approved.
⁴ No expansion of POPCO above 60 Mscfd was approved by the County.

Source: Arthur D. Little, 1986.

was to what extent offshore emissions had an impact the onshore environment.

Informal discussions were held between Exxon, the County and representatives of local environmental groups from December 1986 through June 1987. The discussions were aimed at modifying the SYU project to accommodate Exxon's production requirements and the County's environmental concerns. Based on these discussions, Exxon modified the SYU project and submitted a new final development plan which was approved by the County Planning Commission in September 1987. Project modifications included electrification of the platforms, expanding the onshore cogeneration plant from 25 to 49 MW, using fewer supply boats with cleaner emissions, and funding further study of emissions.

In exchange, Exxon was allowed to trade its OS&T emissions for some of Chevron's Point Arguello platform emissions offsets, obtain some of Chevron's onshore emissions credits for the LFC plant and count as an offset credit removal of the OS&T. This gives Exxon enough emissions offsets to proceed with the project. In November 1987, the Air Pollution Control District issued a final authority to construct permit for the project. The California Coastal Commission issued its Consistency Determination for the SYU Project in February 1988. On January 21, 1988 the State Lands Commission approved Exxon's marine terminal and pipeline leases in state waters. Groundbreaking ceremonies were held for the project on April 15, 1988.

CONCLUSION

The growing environmental awareness on the part of citizens and elected officials of California in the late 1960's ultimately affected the way oil and gas development would proceed. Governmental arrangements were developed that opened the door for greater state and local participation in the process of accommodating onshore oil and gas development. In Phase I of project review for the Santa Ynez Unit, state and local influence over the process was less significant than in Phase II.

During the initial Phase I development of the SYU, a number of project mitigations were imposed by the California Coastal Commission (then the State Coastal Commission). Because these conditions were unacceptable to Exxon, it had the option of proceeding with development offshore with the approval of the Minerals Management Service. During

Phase II, the project proposal contained similar options as Phase I. However, this time the process was subject to consistency review by the California Coastal Commission. At several phases in negotiations, Exxon challenged the scope of consistency review. State and local governments were concerned with air emissions from OCS activities and the risk of oil spills. At the heart of the controversies was the precedent that could be set that would govern future OCS activity. Project specific mitigation measures were developed for the project to the satisfaction of both Santa Barbara County and Exxon, although the air quality issues have not been resolved for future OCS activities.

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CHRONOLOGY: EXXON'S SANTA YNEZ UNIT

- 12/29/66 Call for nominations of areas for federal oil and gas leasing - OCS off California (31 FR 16629) - Santa Barbara Channel official leasing maps 6A and 6B.
- 12/28/67 Tentative tract selection/area identification.
- 12/28/67 Notice of sale (32 FR 209884). Lease sale conditions included the protection of aesthetic and aquatic values and fishing operations. Lease sale stipulations included the protection of military access and the assumption of risk for any damage to persons or equipment doing business with the lessee.
- 2/6/68 Lease Sale P4. First major lease sale--71 tracts were leased for a total return to the federal treasury of \$603 million. Exxon purchased its Santa Ynez leases for \$94 million. Chevron USA and Shell also purchased tracts within the unit.
- 2/1/69 Get Oil Out! (GOO) organized in Santa Barbara County by former state Senator Alvin Weingand and Michael Bottoms.
- 7/13/69 Hondo field discovered.
- 1/1/70 National Environmental Policy Act becomes the law of the land.
- 5/8/70 Pescado and Sacate fields discovered.
- 11/12/70 The USGS approves plan by Exxon, Chevron, and Shell to form the Santa Ynez Unit with Exxon, the major leaseholder, as operator.

- 1/15/71 Exxon submits its initial DPP to the USGS. The plan contains both an onshore and an offshore option for development.
- 11/72 The people of California approve Prop. 20 creating the California Coastal Conservation Commission.
- 10/2/73 Hearings are held on draft environmental statement by USGS. Pipeline alternative is raised at the hearing.
- 5/3/74 Final Environmental Impact Statement issued by USGS.
- 8/16/74 Department of the Interior approves both options of the DPP.
- 12/18/74 Santa Barbara County Planning Commission zones Las Flores Canyon to permit treating and storage of oil and gas processing.
- 10/21/74 Final Environmental Review is issued by Santa Barbara County.
- 12/19/74 State Lands Commission approves the pipeline and marine terminal lease.
- 2/10/75 Santa Barbara County Board of Supervisors approves the onshore option of the project and imposes 72 environmental and operational conditions.
- 5/25/75 Referendum vote on the supervisor's actions. By a margin of 600 votes, the voters approve the onshore option.
- 6/75 Get Oil Out (GOO) files a suit against Exxon claiming insufficiency of the EIS.
- 8/6/75 Supervisor Jim Slator and State Senator Omer Rains propose pipeline alternative.

- 9/11/75 South Central Coastal Commission approves a coastal development permit with conditions. The decision is appealed to the State Coastal Zone Conservation Commission by local interest groups.
- 3/6/76 The State Coastal Commission approves the coastal permit with conditions. The permit allows Exxon to use the marine terminal for five years. After that, the terminal will expire pending the result of a pipeline feasibility study. Exxon refuses to accept the permit with these conditions and appeals to the Department of the Interior.
- 6/23/76 Platform Hondo jacket is installed in the Channel.
- 7/21/76 Department of the Interior finds the State Coastal Commission permit conditions unreasonable since they require the lessees to operate in a regulatory climate of excessive uncertainty. Department of the Interior reaffirms the offshore treating alternative.
- 9/3/76 EPA advises Exxon that an air permit may be needed for the OS&T and requests air emissions data.
- 11/10/76 The State Coastal Commission files suit to prevent the offshore treatment of oil.
- 1/77 Governor Brown and the County of Santa Barbara request Secretary of the Interior Andrus to revoke the OS&T.
- 4/19/77 Department of the Interior informs the State that it is unable to revoke the OS&T, but suggests to the State that it will reconsider if the state proposes new onshore conditions.
- 5/13/77 EPA issues a draft water discharge permit (NPDES permit) which includes air emission conditions.
- 6/28/77 With reservations, Secretary Andrus approves the new onshore permit conditions.

- 7/19/77 Exxon meets with the Undersecretary of the Interior and expresses reservations over the permit conditions.
- 8/29/77 Secretary Andrus advises Governor Brown that he will not revoke the OS&T even though the state has revised its onshore permits.
- 9/15/77 Exxon drills the first of Hondo's 24 wells.
- 10/4/77 EPA holds a hearing on the NPDES permit and withdraws its air quality conditions from the water discharge permit.
- 2/17/78 EPA issues the NPDES permit for water discharges from the OS&T.
- 3/3/78 California Air Resources Board challenges the NPDES water permit for the OS&T, stating that air quality conditions must be added.
- 4/18/78 The EPA officially determines that Exxon cannot proceed with the OS&T without an air permit.
- 5/78 Exxon files petition for review of the EPA determination in the Ninth Circuit Court
- 6/28/78 The State of California files suit in Santa Barbara Superior Court to require Exxon to get a state air permit.
- 7/24/78 People (State of California) v. Exxon is moved from Santa Barbara Superior Court to federal court.
- 10/30/78 Federal District Court rules that California cannot require an air permit for OS&T (People v. Exxon).
- 11/22/78 Court decides GOO v. Exxon in Exxon's favor.
- 4/11/79 The Ninth Circuit Court hears Exxon v. EPA case.

- 8/21/79 The Ninth Circuit Court rules that Department of the Interior and not the EPA has jurisdiction for air emissions on the Outer Continental Shelf.
- 1980 Memorandum of Agreement I is executed between the County and Exxon. Exxon agrees to make land available in LFC under reasonable terms and conditions for development of oil processing facilities by others.
- 4/2/81 Production begins off Platform Hondo.
- 10/82 Revised DPP submitted to MMS.
- 10/8/82 Memorandum of Agreement is executed between Exxon, the County of Santa Barbara, the Santa Barbara County APCD, and the CARB. The MOA sets forth the provisions which affect the onshore and offshore options of the revised DPP.
- 11/82 Application for Option A (offshore) and Option B (onshore) is filed with Santa Barbara County.
- 12/82 MMS deems application complete, which starts consistency review by CCC.
- 4/83 Santa Barbara County deems application complete, starting the EIR/EIS process.
- 1983 JRP is formed and is limited to major permitting agencies: MMS, SLC, CCC, Governor's Office of Planning and Research, and Santa Barbara County as the state lead agency and chair.
- 6/83 CCC finds Option A inconsistent with CZMA. Exxon withdraws Option B landward of the 3-mile limit. CCC finds the OCS portion of Option B consistent.
- 7/22/83 Exxon files an appeal with the Department of Commerce for Option A override.
- 10/83 First draft of the EIR/EIS is released for public comment.

- 11/83 County Board of Supervisors makes an interim finding that pipeline transportation is infeasible for Exxon as an individual operator, allowing Exxon to pursue a marine terminal application.
- 2/18/84 DOC issues interim determination on Option A consistency appeal, staying a final decision until final state and county action on the onshore development.
- 4/84 Exxon submits Coastal Development Permit Application to County, Consistency Certification to CCC, and Section 10 and 404 application to the Army Corps of Engineers.
- 5/84 Santa Barbara County Oil Transportation Plan approved.
- 7/6/84 Final EIS/EIR certified by Santa Barbara County.
- 7/19/84 Santa Barbara County Board of Supervisors adopts amendments to its Local Coastal Program to allow a new or expanded marine terminal for tanker transportation of crude oil either until pipelines are available and for emergency use.
- 8/14/84 Santa Barbara County approves all elements of Option B (except the marine terminal) with conditions. The marine terminal is found to have significant potential air quality problems which could occur if the marine terminal is sited at the proposed 5,000 foot nearshore location. The County suggests mitigating this by locating the terminal farther offshore.
- 8/84 Getty proposes expansion of the Getty Gaviota EIR to include a marine terminal siting study.
- 8/27/84 Exxon reactivates Option A appeal to the DOC, and withdraws its CDP application and consistency certification from CCC consideration.
- 9/84 CCC approves the County LCP and zoning ordinances as per the Oil Transportation Plan.

- 11/84 Exxon brings action in federal court against Santa Barbara County and the Santa Barbara APCD. This litigation challenges the denial of the marine terminal and the condition requiring pipelining out of the County.
- 1/85 Planning Commission indicates Gaviota as the preferred site for the single consolidated marine terminal allowed by County policy.
- 2/85 Texaco's (formerly Getty) PDP and conditional use permit is approved by the Commission. This is appealed by a number of parties including Texaco and Exxon.
- 2/85 Exxon and Santa Barbara County enter into a Settlement Agreement committing Santa Barbara County to modifying permit conditions and to making a marine terminal siting decision of Gaviota or Las Flores by 3/5/85.
- 3/5/85 Santa Barbara County Board of Supervisors selects Gaviota as the preferred marine terminal site.
- 3/11/85 Santa Barbara County PDP permit conditions for SYU development transmitted to Exxon.
- 3/85 Exxon resubmits its Las Flores Canyon Consolidated Marine Terminal PDP application to the County with modified terminal designs to reduce environmental impacts. Most of these changes have been anticipated in the Texaco Gaviota Marine Terminal EIR. Exxon also resubmits its SYU coastal development permit application to CCC.
- 4/85 Exxon, Chevron, Texaco, Sun, and Phillips jointly propose to the County an interim marine terminal at Gaviota and a consolidated marine terminal at Las Flores Canyon.

- 8/8/85 Santa Barbara County Energy Division prepares a supplemental EIR for LFC Marine Terminal and Gaviota Interim Terminal.
- 8/8/85 CCC approves consistency for nearshore Option B.
- 9/85 MMS approves the SYU development plan for onshore treating.
- 9/20/85 MMS Record of Decision is completed for the SYU.
- 10/15/85 Santa Barbara County approves the PDP for LFC and Gaviota marine terminals.
- 11/12/85 Santa Barbara County appeals the MMS Record of Decision on the SYU due primarily to air quality concerns.
- 1/86 Exxon submits draft proposal to the County to resolve remaining SYU issues. Included in the description are the elimination of one platform, delayed installation of platform Heather until after peak emissions, and phased construction of the marine terminal.
- 2/11/86 Exxon formally submits SYU changes to the County.
- 2/86 Exxon, with input from affected agencies, submits a proposed addendum to the February 1985 agreement.
- 4/86 The County Board of Supervisors approves a modified addendum to the settlement agreement.
- 4/86 SEIR is initiated to evaluate SYU project changes per Addendum to the Settlement Agreement.
- 4/86 Exxon requests that the DOC continue the stay of Option A appeal.
- 4/86 Exxon submits revised SLC lease application for SYU.

- 4/86 Citizen's Planning Association files suit against the County charging that the Addendum amounts to the granting of a permit without proper environmental review and public hearings.
- 7/19/86 The Superior Court dismisses this suit, emphasizing that the County retains, and is expected to exercise, full discretion to impose conditions to mitigate environmental impacts.
- 7/86 DOC notifies Exxon that the stay of Option A appeal is continued.
- 7/86 SLC lease application is deemed complete.
- 8/86 SYU SEIR is certified by the County.
- 9/86 The County issues land use and air quality permits which Exxon feels are inconsistent with the Settlement Agreement and Addendum. Exxon reactivates its appeal to DOC. In question are conditions requiring Exxon to fully mitigate adverse air quality impacts.
- 11/86 Exxon submits a brief to DOC in support of request for reactivation of appeal.
- 1/19/87 Exxon submits response brief to DOC addressing comments made in CCC, and the County, briefs filed in early January.
- 4/87 Exxon files response to additional comments by CCC and the County on DOC appeal briefs.
- 6/87 Exxon and the County announce agreement to re-initiate SYU Option B permitting. Permit applications are filed with the County, CCC, COE, and MMS. Exxon Option A appeal and lawsuit are suspended.
- 8/87 SLC deems the lease application complete.
- 9/15/87 The County approves SYU FDP.

- 10/87 SLC releases draft SYU SEIR which addresses marine terminal and pipeline concerns.

- 10/87 MMS releases public notice of DPP revisions.

- 11/87 APCD issues Authority to Construct permit.

- 1/88 SLC certifies SEIR. SLC approves leases.

- 2/88 California Coastal Commission issues Consistency Determination.

- 3/88 Construction begins in Las Flores Canyon.

Note: This chronology is compiled from a variety of sources, including, but not limited to, Santa Barbara County Energy Division Staff Reports, Exxon Company U.S.A. publications, and the Santa Ynez Unit Project Supplemental EIS/EIR by Arthur D. Little.

CHEVRON'S POINT ARGUELLO PROJECT

In 1981, Chevron, Texaco, and their respective partners (hereafter referred to as Chevron) discovered the Point Arguello Field. By 1982, Chevron estimated the field could yield as much as 500 million barrels of oil and 200 billion cubic feet of natural gas, the largest domestic find since Alaska's Prudhoe Bay. The Chevron Point Arguello Project (PAP) is important in the evolution of the Santa Barbara County as well as federal and state permitting processes. In 1984, the proposed PAP included three new platforms, pipelines to transport the oil and gas ashore for processing, and a processing facility. The PAP has been a catalyst for several innovative mitigation strategies and will ultimately guide future large-scale oil and gas development projects.

The PAP, as of this writing, is on line but has not begun production. When under way, it will be the largest project of its kind off the coast of Santa Barbara, with project costs approaching \$2 billion (Englehardt 1988).

OCS LEASE SALES 48 AND 53 - THE SANTA MARIA BASIN

In June 1979 and again in May 1981, MMS placed a large number of tracts up for bid during OCS Lease Sales 48 and 53. This opened up the Santa Maria Basin off the coast of Santa Barbara for offshore oil and gas exploration and production. Chevron's proposals for development of the Point Arguello field were the first to be received by MMS in the Santa Maria Basin "frontier area."

For nearly eleven years, Chevron had collected geological data which had prompted them to bid a substantial amount of money for OCS tract P-0316 in the 1979 sale. During the same sale, Texaco acquired tract P-0315 in the same vicinity. Subsequent discoveries made on tract P-0316 confirmed the belief of Chevron petroleum geologists that the Basin contained a "giant" oil field (at least 100 million barrels of oil). In OCS Lease Sale 53, Chevron and partner Phillips Petroleum acquired OCS tract P-0450 for \$333 million, the largest bid to date for a single OCS tract.

PROJECT DESCRIPTION

In 1982, Chevron made public its "giant" discovery in the Basin. Around the same time, MMS introduced the concept of "area studies" as a means to consolidate development in an individual sub-basin and reduce the scope of environmental review needed for future projects. State and county participants agreed to an area study approach which, according to MMS (Dunaway 1988), would:

- o use resource estimates provided by the industry to predict future development in the Basin;
- o predict the rigs, pipeline capacity, and onshore facilities needed to accommodate expected production;
- o evaluate and control the potential cumulative impacts from development; and
- o require projects to be designed to accommodate these projected needs.

Because substantial additional petroleum reserves are believed to be harbored in the Basin, the area study analysis would provide an evaluation of impacts related to expected total buildout of the area. Chevron and Texaco, with the knowledge that the Point Arguello field was a candidate for an MMS area study, designed a profitable project which they felt provided the consolidated facilities that were necessary.

The area study analysis determined a total maximum of eight platforms would be needed to develop all future reserves in the area. Installation of these platforms would be over a nine-year period at a rate of one per year, with a 30-year life for each platform. The offshore component of the project called for two Chevron platforms, Hermosa (P-0316) and Hidalgo (P-0450), and one Texaco platform, Harvest (P-0315). The onshore facilities required renovation and expansion of the existing gas processing facilities at the Chevron-owned Gaviota processing plant to include oil processing, and an ocean outfall line for disposal of produced water offshore of Gaviota. As a result of the area study concept and emerging policies for consolidation, oil and gas pipelines were designed with significant excess capacity.

As with all three case studies, a major issue was how to get the oil and gas onshore for processing. The project proposed pipelines to carry oil and gas from Harvest and Hidalgo to Hermosa, pipelines to carry combined oil and gas 10 miles to a landfall 1.5 miles north of Point

Conception, and pipelines to carry the oil and gas a remaining 17 miles to the Gaviota processing facility (Figure C.5). The consolidated pipeline design called for one pipeline 24 inches in diameter to transport up to 250,000 barrels a day of oil, and another, 20 inches in diameter, to transport up to 160 million standard cubic feet of gas a day. This design capacity was large enough to support the average peak production from six to nine platforms if increased production was needed.

Because the pipelines and the Gaviota processing facility were consolidated facilities, their construction, installation, and operation required input from other oil and gas companies. This input resulted in 18 companies joining together into three consortia: the Point Arguello Pipe Line Company (PAPCO), the Point Arguello Natural Gas Line Company (PANGLCO), and the Gaviota Gas Plant Company (GGP). Chevron Pipeline Company and Chevron U.S.A. are the managing partners of these three partnerships.

This proposal was submitted to the Joint Review Panel (JRP) for the Point Arguello Project in 1982, with the County as the lead agency. The Point Arguello Field and Gaviota Processing Facility Area Study and Chevron/Texaco Development Plans EIR/EIS were released by the Joint Review Panel (JRP) in November of 1984. Chevron submitted its final development plan (FDP) in May of 1985, and it was reviewed and conditionally approved by the County Board of Supervisors and several county agencies in August of 1985. The approved FDP required the fulfillment of more than 160 permit conditions, several of which are discussed in this case study.

INITIAL PHASES OF THE POINT ARGUELLO PROJECT

While the MMS involvement in the JRP process was limited to the offshore portion of the project, its involvement in the initial stages of Chevron's platform and pipeline planning was substantial. In accordance with the lease stipulations, MMS requested several site-specific surveys to be conducted on these hard substrate features prior to exploration and the submittal of the development plans. A total of five site-specific biological surveys were conducted in the Point Arguello area between 1982 and 1984. Results of the surveys indicated that the deeper features were predominantly sediment covered and "disturbed" communities. However, hard bottom substrate occurred at shallow depths and featured longer-lived,

diverse biological communities. In addition, three archaeologically significant sites were identified by these surveys. Another potential impact identified was the possibility of scarring from anchors used during the installation of platforms and pipelines.

To avoid these areas of biological and cultural interest, Chevron engineers conducted high-resolution geophysical surveys (pursuant to Lease Sale 48 and 53 stipulations) to ascertain the best pipelaying route possible.

MMS's mitigation strategy for the proposed project was submitted to Chevron and Texaco in the form of a Letter of Approval. The conditions stated that the oil companies must:

- o Submit detailed anchoring plans. The corridors for anchor placement during installation procedures shall be selected to minimize impacts to hard bottom features and cultural resources to the maximum extent possible.
- o Submit an Operations Curtailment Plan, which lists conditions (weather and other constraints) under which pipe laying operations will not proceed.
- o Conduct post-installation geophysical surveying over the area of operation and submit a side scan sonar mosaic with survey results.
- o Propose permanent mooring locations intended for consolidated use by supply and crew boats servicing the platform over the life of the project. Mooring sites shall be selected to minimize impacts to hard bottom features (Dunaway and Schroeder n.d.).

During the installation of facilities, MMS conducted routine inspections to ensure that the anchor mitigation plans were followed. MMS also required post-construction surveys and reports in order to ensure compliance. MMS maintains that adequate mitigation and monitoring of environmental impacts occurred for the construction and installation phase of the Point Arguello Project. But the County, commercial fishermen, and private citizens still believe that this phase of the project resulted in a substantial loss of fishing gear and grounds. Additional impacts to the commercial fishing industry resulted when the construction of the pipeline extended over another year. This loss of a productive fishery area was resolved by awarding compensation to fishermen during the construction phase.

CONTROVERSY OVER THE PIPELINE ROUTE

When the pipelines from Point Conception to Gaviota were due to be constructed and laid, the California Coastal Commission (CCC) requested a change in the original development plan. The Final EIR/EIS documented offshore pipelines to Gaviota as the environmentally preferred alternative. By approving the FDP, both the Planning Commission and the County Board of Supervisors approved the offshore pipeline alternative. However, biological and cultural surveys conducted pursuant to the lease stipulations and the reality that oil spillage onshore is contained more easily than offshore spillage, prompted the CCC to recommend onshore pipelines as a new condition for the Final Development Plan (FDP) issued by the County in early 1985 (Figure C.6). This recommendation resulted in a hearing held April 9, 1985.

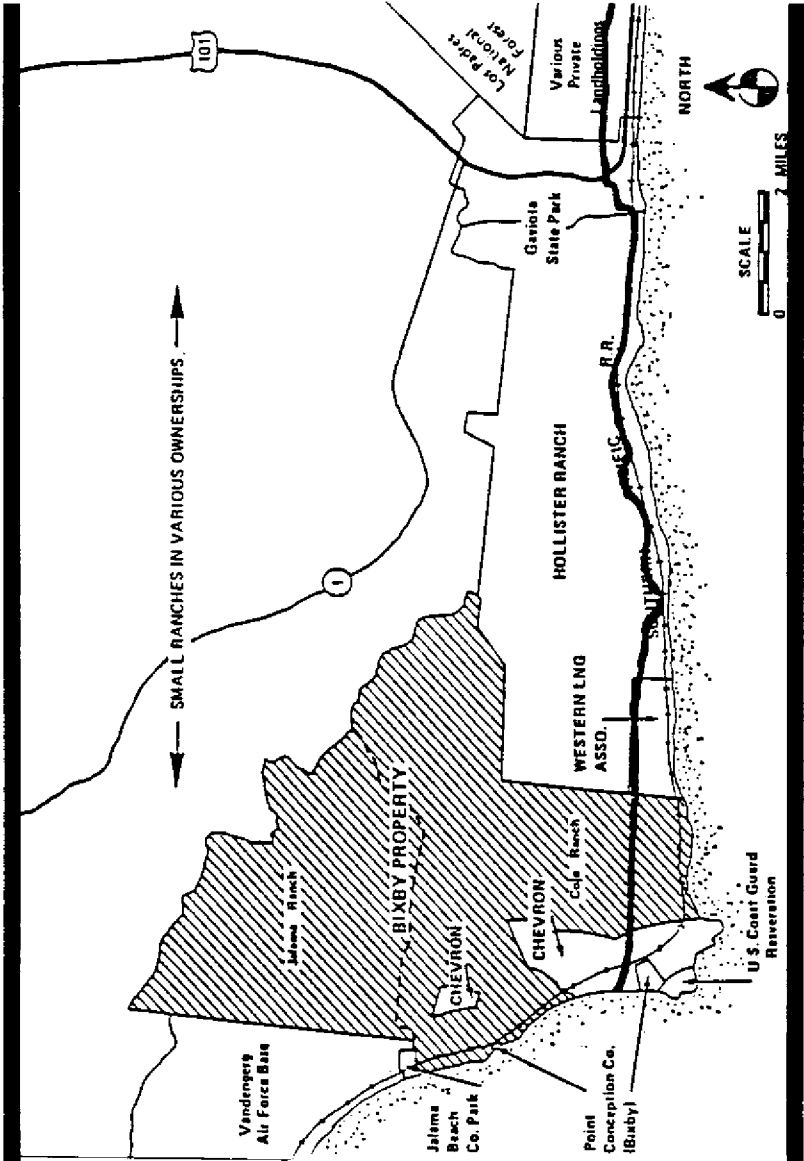
The CCC recommendation angered the Hollister Ranch Landowners Association. Hollister Ranch represents a large portion of coastal property between Point Conception and Gaviota, the proposed site of the CCC-recommended PAP onshore pipelines. For almost eleven years, the CCC and the Hollister Ranch had been involved in a dispute over public access to the immediate shoreline adjacent to the Ranch. The state owns all coastal property below the mean high tide line. Private beachfront property such as the Hollister Ranch, however, prevents the public from having access to that public land.

Hollister Ranch maintained that the relatively pristine shoreline adjacent to their property would be damaged if public access was awarded. They were also concerned about possible pipeline failure resulting in oil spills and toxic vapors, as well as construction-related impacts. Their concerns were shared by several environmental organizations.

Two of these environmental groups, Get Oil Out (GOO) and the Sierra Club, made appeals to the suggested new FDP permit condition. In addition, the Hollister Ranch, in February of 1985, requested that the Superior Court set aside the FDP on the grounds that the EIR/EIS was inadequate.

The CCC broached its longstanding problem with public access off Hollister Ranch at the April hearing. The CCC requested the advice of County Counsel in Santa Barbara and the California Attorney General as to whether Chevron could use the power of eminent domain to condemn the Hollister property. The legal counsel determined that if there existed a

Figure C.6 Proposed Onshore Oil and Gas Pipeline.



Source: Arthur D. Little, 1984.

permit condition which required Chevron to acquire property to be used for public access, then Chevron would have the power to condemn property because its consolidated pipelines would be a common carrier and would function as a public utility service.

On April 9, 1985, after the hearing, the CCC approved Chevron's FDP but turned down a staff recommendation that Chevron use condemnation to provide public access to Hollister Ranch Beach. Instead, the CCC required Chevron to pay the Coastal Conservancy one million dollars to negotiate an agreement with the Hollister Ranch owners for public access. Further, a county public access condition requires Chevron to provide public access across Point Conception property. The County also required that Chevron dedicate 36 acres of its land at Point Conception for a park, or give \$500,000 to complete work on an existing park. In addition, Chevron had to contribute \$327,000 each year to the Coastal Resource Enhancement Fund (CREF) for the life of the Project. The initial one million dollars Chevron paid the Conservancy to resolve the Hollister Ranch public access dispute would serve as the first three years' payment to CREF.

The public access issue resulted in the legislature amending the State Coastal Act specifically to authorize the California Coastal Conservancy to work out an access program with Hollister Ranch. The Conservancy now has the right to condemn property if necessary to gain easements or ownership for public access.

NATIVE AMERICAN CONCERNS

The State and County required Chevron to gather information on cultural resources in the vicinity of their new pipeline route. Neighboring Native American tribes maintained that numerous artifacts lay buried in the proposed pipeline route; they did not want Chevron's surveys and pipelaying to disturb those resources. Chevron agreed to an extensive cultural survey which identified 31 archaeological sites. Chevron made concessions to the tribe because the cultural impacts found were greater than expected in the 1984 EIR/EIS. Further, mitigation efforts resulted in Chevron hiring several Chumash Indians to monitor the pipelaying to insure that Chevron would report what artifacts and sites that they found. This county strategy resulted in the 1984 Cultural Resource Monitoring Plan.

MITIGATION FOR SAFETY

Further mitigation measures were required by the County as plans for construction and expansion of the Gaviota processing facility proceeded. Concern over the safety of the Gaviota facility also resulted in permit conditions such as the requirement for Chevron to build schools, additional fire stations, a desalinization plant, and other infrastructure and services. The project also included an overpass and associated ramps and frontage roads for Interstate Highway 101.

As a condition of their FDP, Chevron was requested to fund the relocation of the Vista Del Mar School, which was currently located less than half a mile away from the Gaviota facility. The reasons for moving the students were to reduce their exposure to excessive noise and dust, and remove them from the "hazard footprint" for toxic and flammable vapor dispersion should an accident occur. The resulting permit condition called for relocation to a temporary site, and then construction of a permanent school, both funded by Chevron. The estimated cost of these mitigation measures is approximately \$250,000 per student.

The County identified the need for an additional fire station through the June 1985 County Fire Department review on Chevron's fire protection programs for the Gaviota region. By February of 1986, permitting was under way for a temporary fire station, however, the County requested a supplemental EIR (SEIR) to determine if there was a need for Chevron to build a permanent fire station for the County at Gaviota. The SEIR was released on May 29, 1987, and a hearing on the SEIR was held on June 25, 1987. On July 21, 1987, the County approved a Conditional Use Permit for the Gaviota fire station, incorporating special permit conditions requiring Chevron to dedicate a preservation easement to protect sensitive cultural resources in the vicinity of the fire station access road.

HYDROGEN SULFIDE CONCERNS

The primary function of the gas processing facility is to remove the H_2S , natural gas liquids (NGL's) and liquid petroleum gases (LPG's) from gas in order to prepare it for injection into a sales gas pipeline network. The H_2S is converted to molten elemental sulphur. This entire process is referred to as "sweetening" the natural gas.

Recent actual production well test data showed that the H₂S concentrations in the produced gas could be as high as 20,000 ppm, instead of the 7,000 ppm documented in the 1984 EIR/EIS from previous drill stem test data. Concern arose that the processing facility was not designed for these levels of H₂S and that the increased levels of H₂S might result in more frequent ruptures of the pipeline.

The County requested in April 1988 that a Supplemental Environmental Impact Report (SEIR) be prepared to assess the environmental impacts of the increased levels of hydrogen sulfide. If there are changes in a project which differ from the initial operating conditions, the County must determine if that change is in substantial conformity with their Final Development Plan. The SEIR will be used by the County to consider Chevron's request that they be found in substantial conformity with their original FDP permit. If the increased levels are not found in substantial conformity, then the SEIR will be used as a basis for modifying the FDP.

Chevron industry advisors believed that the most expedient way to resolve this issue was to comply with the County's request. The processing facility has been ready for start-up since late 1987 but has not been able to operate due to these new findings. In the process, the delay of operations has resulted in Chevron's losing an estimated one million dollars a day and severe employee reductions for more than thirty directly and indirectly affected companies in the County (Palmer 1988). Monthly revenue losses to these other companies due to the delay were also estimated to be more than one million. The County has been urged by industry and the California Coastal Operators Group (C/COG) to complete its review process expeditiously and allow start-up of PAP.

The draft SEIR was released on August 5, 1988. Two hearings to discuss comments on the draft have been held. A Final SEIR is now being prepared. It is uncertain at this time how long start-up of the project will be delayed.

AIR QUALITY TECHNOLOGY

A good example of cooperation and innovation lies with the recent agreement between Chevron and the County for a Chevron-funded offshore Turbine Generator NO_x Reduction Technology Development Program. This agreement ensures Chevron's use of Best Available Control

Technology (BACT) to provide offshore emission controls and monitoring. Chevron's initial investment of \$5 million will be used to develop, field test, and install the equipment. If this program is successful, this example of BACT could likely become standard equipment for project operations. Two examples of further BACT systems installed on the PAP facilities include a Selective Catalytic Reduction system and Continuous Emissions Monitoring system (Englehardt 1988). The use of these innovative and expensive systems indicates Chevron's willingness to make substantial concessions to the County over air quality concerns. Chevron has met requirements to offset all emissions at a ratio of 3:1 to help the County meet its Air Quality Attainment Plan.

CONCLUSION

The Chevron case study illustrates how the County reworked its permitting strategy on a project-specific and site-specific basis to respond to potential environmental impacts. Chevron's initial attitude toward the Santa Barbara County permitting process was best described by Chevron Corporation Chairman George Keller: "It's time for industry to go beyond the concept of compliance with environmental laws, (because) compliance means that the moral initiative lies elsewhere, outside of industry. Perhaps the time has come for industry to seize that initiative and demonstrate our credibility in a way that would be beyond challenge" (*Oil and Gas Journal* 1987). In fact, the key to the overall success of the Point Arguello Project during the initial stages of the permitting process, where others have failed, may lie in setting environmental priorities and advocating scientific risk assessment, especially for toxic substances (*Oil and Gas Journal* 1987). Chevron was quite cooperative during the JRP process and came up with a number of good realignments and trade-offs of its own for the project.

While the offshore construction and installation phase went rather smoothly, once the project hit shore at Point Conception, Chevron was forced to conform to an evolving county permitting procedure which was not clearly articulated in the early stages of the project. Factors external to the applicant/county relationship caused additional uncertainty and delay. These include the CCC action concerning pipeline routes, tribal concerns over cultural resources, and unexpected levels of H₂S. While a frustrating experience for Chevron, the project has contributed to a more comprehensive, sophisticated (though still evolving) county permitting strategy for OCS development.

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CHRONOLOGY:

CHEVRON'S POINT ARGUELLO PROJECT

6/29/79	OCS lease sale 48 held in which Chevron and partners secure lease OCS-P 0316.
5/28/81	OCS lease sale 53 held in which Chevron and Partners secure lease OCS-P 0450).
11/81	Chevron discloses oil strike in Point Arguello Field.
1982	Chevron-Phillips submits application for Point Arguello Project.
3/83	Beginning of Area Study Process by MMS.
11/83	Notice of Preparation (NOP) released by MMS.
7/84	Guide to comments on NOP released.
10/84	Final EIR/EIS for Chevron Pt. Arguello project released by JRP.
6/29/84	Pipeline permit application for pipeline from Hidalgo to Hermosa submitted.
12/18/84	County Board of Supervisors unanimously approve Chevron's proposed Gaviota processing facility. The onshore pipeline is approved 4-1. Chevron must now prepare final development plan (FDP) which incorporates the 165 permit conditions and programs approved by Board to mitigate environmental impacts associated with the project.
Spring 1985	Target construction date for platforms and pipelines.

- 1/17/85 Two appeals of County's permit approvals on Chevron project filed with the CCC.
- 1/21&22/85 Two lawsuits challenging EIR and County's decision on Point Arguello Project filed.
- 2/4/85 Certified EIR for Getty-Gaviota marine terminal released.
- 2/85 Planning Commission public hearings held on Texaco-Gaviota consolidated coastal facility (marine terminal). The Commission conditionally approves Phase I buildout: rearranging existing tanks, building two new tanks, mooring 14,000 ft offshore, new pumps, flowlines, vapor recovery system. Planning Comm. approves Gaviota as the preferred site for South Coast marine terminal Feb. 26, 1985.
- 4/1/85 Seven appeals filed to Board of Supervisors seeking reversal or modification of Planning Commission action on Marine Terminal. Hearing is scheduled for this date.
- 4/8/85 Joint Proposal of Exxon, Texaco, and Chevron submitted asking that approved marine terminal proposal be withdrawn in favor of Las Flores Canyon site.
- 5/85 Chevron/Texaco submit FDP.
- 5/85 Chevron/County Air Pollution Control District finalizes Authority to Construct permit application.
- 5/85 Archaeological field work begins along pipeline corridor from Pt. Conception to Gaviota. Chevron works with Caltrans on Gaviota freeway overpass project. County Public Works Dept. reviews systems safety and facility design.
- 5/13/85 Board of Supervisors give conceptual approval to Las Flores Canyon Site for marine terminal on condition that Gaviota is phased out, and accepts Gaviota interim marine terminal concept in principle.

- 6/85 The industry joint venture submits a Development Plan and Conditional Use Permit for Gaviota interim site and these are reviewed by staff for completeness.
- 6/85 County Fire Dept. reviews Chevron's fire protection programs and new fire station in Gaviota region.
- 7/85 Chevron's project is the first in the County to reach FDP stage. LPG/NGL resolution and compliance with air quality conditions are key considerations for these permit hearings. Chevron agrees to air quality control offshore to minimize onshore impacts of those emissions. One platform is in place, second one will be installed in a few weeks.
- 7/26/85 Planning Commission gives final approval to Chevron PAP. Two platform jackets are in place (Harvest and Hermosa). Chevron is scheduled to begin construction in October.
- 7/30/85 Chevron FDP hearings conclude.
- 7/85 Final Environmental Review of Interim Marine Terminal and Exxon Consolidated Marine Terminal. Comments in late July. Certification hearings scheduled for late July, early August. Planning Commission hearings on Interim site to begin Aug. 13.
- 8/85 SEMP progress made with Chevron's FDP. Chevron agrees to keep detailed data on expenditures and employment so that the information can be used for SEMP once it is on line.
- 8/19/85 E-4/E-7/E-9 Contract signed by Chevron, APCD, and SB County.
- 9/16/85 Final Decision Document, Authority to Construct Permit No. 6191 - Grading and Site Preparation, Gaviota Site, Chevron U.S.A., Inc. (SB County Air Pollution Control District).

- 10/85 Construction delays set date back to November, 1985. Relocation of Vista Del Mar School is continuing concern, as well as right of way for Chevron pipeline across Hollister Ranch.
- 11/12/85 Chevron is issued grading permit for onshore Gaviota processing facility. Grading and construction of facilities north of 101 are expected to begin in November/December 1985. Facility is expected to be operational by late 1987.
- 11/85 Chevron and Santa Barbara County face legal challenges from Hollister Ranch and Sierra Club over pipeline route. Court hearings ongoing. Work begins on temporary relocation of Vista Del Mar School two miles east of facility.
- 11/85 Interim Marine Terminal approved in conjunction with Exxon's Consolidated Marine Terminal at Las Flores Canyon, in October. Interim facility consists of expansion of existing facilities and loading operations until July 1, 1990.
- 2/86 PCB spill at old Chevron gas plant site revealed. Contaminated soils will be removed following relocation of Vista Del Mar School on Feb. 13. Permitting under way for temporary fire station. Negotiations between Chevron and California Dept. of Parks and Recreation for approved pipeline rights of way.
- 2/6/86 Final Decision Document, Authority to Construct, Permit No. 5704 Installation and Operation - Point Arguello/Gaviota Oil and Gas Facility - Chevron USA Inc. (SB County APCD).
- 2/13/86 Status Report on implementation of conditions E-4, E-7, E-9 Chevron Point Arguello Project Preliminary Development Plan presented to SB County Planning Commission.

- 4/10/86 CCC is denied request to revoke permit for oil and gas processing facility at Gaviota. Hollister Ranch Owners Association charges that Chevron had intentionally withheld information about toxic contamination during the permitting process.
- 6/86 Hollister Ranch landowners settle dispute with Chevron on road and security conditions. State Lands Commission working on addendum to EIR/EIS to grant offshore right-of-way permit for construction of desalination facility. County contracts with Storrer and Semonsen to monitor implementation of Chevron's EQAP.
- 6/86 Chevron receives permits to begin construction of onshore pipelines leading to Gaviota facility. At the facility, gearing up for construction of oil and gas plants. Hwy 101 overpass construction begins.
- 7/24/86 Workshop sponsored by Planning Commission for discussion of potential project modifications at Texaco Gaviota Marine Terminal.
- 8/22/86 Pipeline permit from Hidalgo to Hermosa approved.
- 8/86 Chevron begins construction work in June for underground oil and gas pipelines to connect Harvest and Hermosa to onshore facilities.
- 11/86 Restoration has begun on areas where both oil and gas pipelines have been laid.
- 1/1/87 One application for permit to drill (APD) submitted.
- 1/20/87 APD approved.
- 2/26/87 Second APD submitted.
- 3/6/87 APD approved.

- 3/11/87 Texaco, for Gaviota Terminal Company, receives Planning Commission approval of FDP for expansion and operation of Gaviota Interim Marine Terminal. Texaco must obtain a Coastal Development Permit before building and grading permits are issued for the project. Before the permit is issued, Planning Commission will hold public hearing to review air quality issues.
- 4/87 Preparation for Gaviota Fire Station Supp. EIR under way. Station is required by a permit condition on FDP.
- 5/87 Onshore oil and gas lines complete from Pt. Conception to Gaviota. Revegetation nearly complete except for tree planting.
- 5/87 SEIR for fire station comes out. Public review until May 29.
- 5/87 Gaviota Terminal Company has appealed nine conditions A-1, A-28, C-4, E-3, E-4, E-8, E-10, Ek-12, E-14. After resolution of appeal, Texaco must obtain Coastal Development Permit.
- 5/8/87 Third APD submitted.
- 5/11/87 County Board of Supervisors grants the Gaviota Terminal Company appeal and modifies several conditions.
- 5/13/87 Final Decision Document - Issuance of Authority to Construct - Permit No. 6408 Installation and Operation: Gaviota Interim Marine Terminal (Gaviota Term. Co.) (SB County APCD).
- 5/27/87 APD approved.
- 6/87 Chevron begins first efforts to replant vegetation displaced by pipeline construction.

- 6/15/87 County Planning Commission hearing for Conditional Use Permit and Coastal Development Permit. Chevron is required to fund construction of a County fire station in Gaviota area as permit condition for processing plant.
- 6/24/87 Fourth APD submitted.
- 6/25/87 Hearing held concerning Gaviota fire station SEIR
- 7/2/87 APD approved.
- 7/9/87 Gaviota Terminal Company is issued a Coastal Development Permit and building permit for onshore construction of Gaviota Interim Marine Terminal. GTC began construction of GIMT.
- 7/21/87 County approves Conditional Use Permit for Gaviota fire station, incorporating special permit conditions requiring Chevron to dedicate a preservation easement to protect sensitive cultural resources in vicinity of fire station access road.
- 7/23/87 Fifth APD submitted
- 7/31/87 Pipelines for Hermosa to shore and Harvest and Hidalgo to Hermosa are completed as of this date.
- 8/87 Hwy 101 overpass complete. Chevron expects to begin processing oil and gas from platform production on Dec. 1, 1987.
- 8/5/87 Planning Commission reviews and approves the extension of Conditional Development Permit for Vista Del Mar School. Staff has recommended extension of approval until March 15, 1989. This will allow time to construct and move school to permanent location.
- 8/25/87 CCC grants Gaviota Terminal Company consistency certification and coastal permit with conditions for the portion of project in state waters.

- 8/26/87 Planning Commission approves request to allow full storage capacity of LPG and NGL at Chevron PAP site. Chevron had originally committed to reducing LPG/NGL volume to 40% to reduce hazard footprint to Vista Del Mar permanent school (condition P-12 of FDP).
- 9/18/87 Chevron receives coastal development permit for Gaviota fire station.
- 10/14/87 Planning Commission objects to Vista Del Mar School plan to acquire Las Cruces Property at Gaviota State Park.
- 10/15/87 Planning Commission vote 3-2 to deny Chevron request to use water trucked in from Buellton for drinking purposes at administration building. Chevron appeals this decision to the Board of Supervisors and a hearing is scheduled for Nov. 9.
- 11/9/87 Chevron successfully appeals to Board of Supervisors regarding Planning Commission denial of plan to provide temporary source of potable water for new Gaviota administration building.
- 1/28/88 Planning Commission holds hearing to review issues related to start up of Point Arguello Project. Testimony is taken regarding county permit conditions such as emergency response plan and hydrogen sulfide safety issues.
- 3/16/88 County Director of Resource Management Department determines that Chevron's proposal to use its recently completed gas pipeline is consistent with the FDP approved for Chevron PAP. Gas will be transmitted from Gaviota to Chevron's offshore platforms, and will be used to run drilling rigs, reducing pollutant emissions (Gas buyback program). County staff are continuing their review of Chevron's compliance with permit conditions.
- 4/88 Hearing held on safety and other issues.

- 8/5/88 SEIR ordered by County Resource Management Division in early 1988 is released by Chevron concerning "sour gas" issue, or unexpectedly high hydrogen sulfide levels in natural gas.
- 9/20/88 Comment period on SEIR closes.

Note: This chronology is compiled from a variety of sources, including but not limited to Santa Barbara County Energy Division "Status Reports" (1984-1988), and articles from Santa Barbara News Press.

APPENDIX D: GLOSSARY

- Bathymetric** - Relating to the measurement of water depth for purposes of charting the shape of the sea floor or specifying a geographic zone.
- Benthic** - Bottom dwelling.
- Biological opinion** - An appraisal from either FWS or NMFS evaluating the impact of a proposed activity on endangered and threatened species.
- Block** - A geographical area, as portrayed on an official MMS protraction diagram or leasing map, that contains approximately nine square miles (2,304 hectares, or 5,760 acres).
- Blowout** - Refers to an uncontrollable flow of fluids from a wellhead or wellbore. Unless otherwise specified, a flow of fluids from a flowline is not considered a blowout as long as the wellhead control valves can be automatically or manually activated. If the wellhead control valves become inoperative the flow is classified as a blowout.
- Buffer zone** - In OCS leasing, any geographic area surrounding or adjacent to a special biologic or cultural resource, commonly deferred from leasing or subject to special conditions.
- Chronic impacts** - Negative biological or other effects which result from small increments of damage or pollution recurring over time; normally associated with sublethal effects.
- Commingling** - Bringing together the production from wells, leases, pools, and fields with production of other operations into consolidated pipeline systems.
- Coastal Zone** - The coastal waters (including the lands therein and thereunder) and the adjacent shorelands (including the waters therein and thereunder), strongly influenced by each other and in proximity to the shorelines of the several coastal states, and includes islands, transitional and intertidal areas, salt marshes, wetlands, and beaches. The zone extends seaward to the outer limit of the United States territorial sea. The zone extends inland from the shorelines only to the extent necessary to control shorelands, the uses of which have a direct and significant impact on the coastal waters. Excluded from the coastal zone are lands the use of which is by law subject to the discretion of or which is held in trust by the federal government, its officers, or agents.

- Cogeneration** - The use of fuel produced at a location to generate power or heat on-site to aid in production.
- Conditional mean resources** - Calculation of resource estimates is a statistical process which results in a range of values within which the actual amount of sources is most likely. The mean is the average of high and low estimates.
- Conditional resources** - Assessment of oil or gas resources under the assumption that economically recoverable resources exist within the area of interest.
- Consolidation** - A method of requiring joint use of production, transport, or processing facilities which results in a reduction in the number of separate facilities constructed.
- Continental shelf** - A broad, gently sloping, shallow feature extending from the shore to the continental slope.
- Continental slope** - A relatively steep, narrow feature paralleling the continental shelf; the region in which the steepest descent to the ocean bottom occurs.
- Conventional pollutants** - Water pollutants other than those associated with toxic chemicals, e.g., pH, biochemical oxygen demand, suspended solids, oil, and grease.
- Deferral** - Most commonly denotes areas left out of lease sales as the result of recommendations during and after the area identification process.
- Development** - Activities that take place following discovery of minerals in paying quantities, including geophysical activity, drilling, platform construction, and operation of all onshore support facilities; and that are for the purpose of ultimately producing the minerals discovered.
- Drill cuttings** - Those substrate materials, e.g., sand and rock, removed from the well bore.
- Drilling discharge** - The general term for materials actually discharged due to drilling, including drilling mud, cuttings, and produced waters.
- Drilling mud** - A special mixture of clay, water, or refined oil, and chemical additives pumped downhole through the drill pipe and drill bit. The mud cools the rapidly rotating bit; lubricates the drill pipe as it turns in the well bore; carries rock cuttings to the surface; serves to keep the hole from crumbling or collapsing; and provides the weight or hydrostatic head to prevent extraneous fluids from entering the well bore and to control downhole pressures that may be encountered (drilling fluid).

- Endangered and threatened species** - Those species identified in 43 FR 238 (December 11, 1978) and subsequent publications. This refers to any species which is in danger of extinction throughout all or a significant portion of its range and has been officially listed by the appropriate federal or state agency; a species is determined to be endangered (or threatened) because of any of the following factors: a) the present or threatened destruction, modification, or curtailment of its habitat or range; b) overutilization for commercial, sporting, scientific, or educational purposes; c) disease or predation; d) the inadequacy of existing regulatory mechanisms; or e) other natural or man-made factors affecting its continued existence.
- Environmental impact statement (EIS)** - A statement required by the National Environmental Policy Act of 1969 (NEPA) or similar state law in relation to any major action significantly affecting the environment; a NEPA document.
- Exclusive Economic Zone (EEZ)** - A geographic zone surrounding all U.S. territory extending from the seaward boundary of the territorial sea out to 200 nautical miles from the shore. Declared by Presidential Proclamation in 1983 as under the sole jurisdiction of the U.S. federal government.
- Exploration** - The process of searching for minerals. Exploration activities include: (1) geophysical surveys where magnetic, gravity, seismic, or other systems are used to detect or infer the presence of such minerals and (2) any drilling, except development drilling, whether on or off known geological structures. Exploration also includes the drilling of a well in which a discovery of oil or natural gas in paying quantities is made and the drilling, after such a discovery, of any additional well that is needed to delineate a reservoir and to enable the lessee to determine whether to proceed with development and production.
- Field** - An area within which hydrocarbons have been concentrated and trapped in economically producible quantities in one or more structural or stratigraphically related reservoirs.
- Five Year Plan** - A plan prepared every five years for leasing of OCS areas under the OCSLA amendments 1978.
- Formation water** - Water trapped within subsurface oil or gas geologic formations, sometimes released as a result of drilling.
- Gas prone** - A region for which resources estimates show much greater likelihood of natural gas than oil.

- Geologic hazard - A feature or condition that, if unmitigated, may seriously jeopardize offshore oil and gas exploration and development activities. Mitigation may necessitate special engineering procedures or relocation of a well.
- Geophysical - Of or relating to the physics of the earth, especially the measurement and interpretation of geophysical properties of the rocks in an area.
- Gyre current - A characteristic of ocean currents for a specific area whereby the average current is circular.
- Hard bottom substrate - Sea bottom areas composed of rock or rocklike material.
- Isobath - Term referring to the line drawn by connecting points of equal water depth.
- Lease - Any form of authorization which is issued under Section 8 or maintained under Section 6 of the Outer Continental Shelf Lands Act and which authorizes exploration for, and development and production of, minerals.
- Lease sale - The competitive auction of leases granting companies or individuals the right to explore for and develop certain minerals within a defined period of time.
- Live bottom - Area of sea bottom containing a rich benthic sea life community relative to surrounding areas.
- Outer Continental Shelf - All submerged lands that constitute the continental margin adjacent to the United States and seaward of state offshore lands.
- Plan of Development and Production - A plan describing the specific work to be performed, including all development and production activities that the lessee(s) propose(s) to undertake during the time period covered by the plan and all actions to be undertaken up to and including the commencement of sustained production. The plan also includes descriptions of facilities and operations to be used, well locations, current geological and geophysical information, environmental safeguards, safety standards and features, time schedules, and other relevant information. Under 30 CFR 250.34-2, all lease operators are required to formulate and obtain approval of such plans by the Director of the Minerals Management Service before development and production activities may commence.

- Plan of Exploration** - A plan based on available relevant information about a leased area that identifies, to the maximum extent possible, the potential hydrocarbon accumulations and wells that the lessee(s) propose(s) to drill to evaluate the accumulations within the entire area of the lease(s) covered by the plan. Under 30 CFR 250.341, lease operators are required to formulate and obtain approval of such plans by the Director of Minerals Management Service before significant exploration activities may commence.
- Produced water** - Seawater or formation water which becomes mixed with petroleum products and is produced from the well; concerns exist over petroleum content and other toxicity factors.
- Production** - Activities that take place after the successful completion of any means for the removal of minerals, including such removal, field operations, transfer of minerals to shore, operation monitoring, maintenance, and workover drilling.
- Reserves** - Portion of the identified oil or gas resource that can be economically extracted.
- Rig** - A structure used for drilling an oil or gas well.
- Risked economically recoverable resource estimate** - An assessment of oil or gas resources that has been modified to take into account: physical and technological constraints on production; the influence of the costs of exploration and development and market price on industry investment in OCS exploration and production; the uncertainty of the estimate; and the possibility that economically recoverable resources may not be found within the area of interest.
- Seismic** - Pertaining to, characteristic of, or produced by earthquakes or earth vibration; having to do with elastic waves in the earth.
- Shunting** - A method used in offshore oil and gas drilling activities where expended drilling cuttings and fluids are discharged near the ocean seafloor rather than at the surface, as in the case of normal offshore drilling operations.
- Sour oil** - Crude oil containing significant quantities of hydrogen sulfide gas.
- Sour gas** - Natural gas contaminated with chemical impurities, notably hydrogen sulfide or other sulfur compounds, which impart to the gas a foul odor. Such compounds must be removed before the gas can be used for commercial and domestic purposes.

- Subsistence uses - The customary and traditional uses by rural Alaska residents of wild, renewable resources for direct personal or family consumption as food, shelter, fuel, clothing, tools, or transportation; for making and selling of handicraft articles out of nonedible byproducts of fish and wildlife resources taken for personal or family consumption; for barter or sharing for personal or family consumption; and for customary trade.
- Supply boat - A vessel that ferries food, water, fuel, and drilling supplies and equipment to a rig and returns to land with refuse that cannot be disposed of at sea.
- Sweet crude - Crude oil containing very little sulfur or sulfur compounds.
- Sweet Gas - Natural gas free of significant amounts of hydrogen sulfide (H_2S) when produced.
- Territorial sea - The sea area immediately offshore of U.S. land territory which extends 3 miles from set baselines and is managed by state governments. (An extension of territorial sea waters to 12 miles is under consideration at the time of writing (1988).)
- Undiscovered resources - Quantities of oil and gas estimated to exist outside known fields.
- Weathering - The aging of oil due to its exposure to the atmosphere causing marked alterations in its physical and chemical makeup.
- 8(g) - Referring to Section 8(g) of the OCSLA, identifying the zone from 3 to 6 nautical miles offshore. States receive 27 per cent of bids and royalties on oil and gas activities occurring in this zone.

(Modified from: U.S. DOI/MMS in the *Proposed 5-Year Outer Continental Shelf Oil and Gas Leasing Program*, Mid-1987 to Mid-1992, Final Environmental Impact Statement, Vol. 3.)

APPENDIX E: LIST OF ACRONYMS

ACMP	- Alaska Coastal Management Program
ADF&G	- Alaska Department of Fish and Game
APCD	- Air Pollution Control District
APD	- Application for Permit to Drill
AQAP	- Air Quality Attainment Plan
ARCO	- Atlantic Richfield Company
ASBS	- Area of Special Biological Significance
ATC	- Authority to Construct
BCF	- Billion Cubic Feet
BLM	- Bureau of Land Management
BOE	- Barrel of Oil Equivalent
C/COG	- California Coastal Operators Group
CARB	- California Air Resources Board
CCC	- California Coastal Commission
CCMP	- California Coastal Management Program
CEQA	- California Environmental Quality Act
CMP	- Coastal Management Plan (Alaska)
COE	- U.S. Army Corps of Engineers
COPP	- Coal Oil Point Project
CZMA	- Coastal Zone Management Act
DEC	- Department of Environmental Conservation (Alaska)
DEIS	- Draft Environmental Impact Statement
DER	- Department of Environmental Regulation (Florida)
DGC	- Division of Governmental Coordination (Alaska), OMB
DNR	- Department of Natural Resources (Washington)
DOC	- Department of Commerce
DOD	- Department of Defense
DOE	- Department of Ecology (Washington)
DOI	- Department of the Interior
DPP	- Development and Production Plan
EIS/EIR	- Environmental Impact Statement/Report
EPA	- Environmental Protection Agency
EQAP	- Environmental Quality Assurance Program
ESA	- Endangered Species Act
FCZMA	- Federal Coastal Zone Management Act
FDP	- Final Development Plan
FEIS	- Final Environmental Impact Statement

FTE	- Full time equivalent
GGP	- Gaviota Gas Plant Company
GOO	- Get Oil Out
H ₂ S	- Hydrogen sulfide
JRA	- Joint Review Agreement
JRP	- Joint Review Panel
LFC	- Las Flores Canyon
MMBBL	- Million barrels
Mbpd	- Thousand barrels (of oil) per day
MMbpd	- Million barrels (of oil) per day
MMS	- Minerals Management Service
MOU	- Memorandum of Understanding
MPCH	- Marginal probability of commercial hydrocarbons
Mscfd	- Thousand standard cubic feet per day
MW	- Megawatt
NEPA	- National Environmental Protection Act
NGL/LPG	- Natural Gas Liquids/Liquid Petroleum Gases
NMFS	- National Marine Fisheries Service
NOAA	- National Oceanic and Atmospheric Association
NOP	- Notice of Preparation
NO _x	- Nitrogen oxides
NPDES	- National Pollutant Discharge Elimination System
NRC	- National Research Council
OCS	- Outer Continental Shelf
OCSLA	- Outer Continental Shelf Lands Act
OEQ	- Office of Environmental Quality (California)
OMB	- Office of Management and Budget (Alaska, U.S.)
OOD	- Office of Offshore Development (California)
OPB	- Office of Planning and Budgeting (Florida)
OPR	- Office of Planning and Research (California)
ORAP	- Ocean Resources Assessment Program
OS&T	- Offshore Storage and Treatment
PANGLCO	- Point Arguello Natural Gas Line Company
PAP	- Point Arguello Project
PAPCO	- Point Arguello Pipeline Company
PDP	- Preliminary Development Plan
POE	- Plan of Exploration
SALM	- Single anchor leg mooring
SBC	- Santa Barbara County
SEIR	- Supplemental Environmental Impact Report
SEMP	- Socio-economic Monitoring Program
SLC	- State Lands Commission (California)

SOI	- Secretary of Interior
SYU	- Santa Ynez Unit
Tcfd	- Trillion cubic feet (of gas) per day
UCSB	- University of California at Santa Barbara
USCG	- United States Coast Guard
USGS	- United States Geological Survey

